

MARINE CORPS Gazette



MARCH, 1946 30c



THIS MONTH'S COVER

THIS is cover artist former SSgt John R. McDermott's conception of a Marine artillery man on Okinawa snapping back to "battery" after that morning cup of "Joe." Many of those who have served overseas will agree that a strong cup of Joe was the one thing that would revitalize the half-frozen, wet, muddy marine and get him going again. This drawing represents another in a series of sketches commemorating the work of our combat artists.

THE MARINE CORPS GAZETTE

Professional Magazine for the United States Marines

ORGAN OF THE MARINE CORPS ASSOCIATION

Offices: Marine Barracks, Marine Corps Schools, Box 106,

Quantico, Va.

Telephone: Extension 4780

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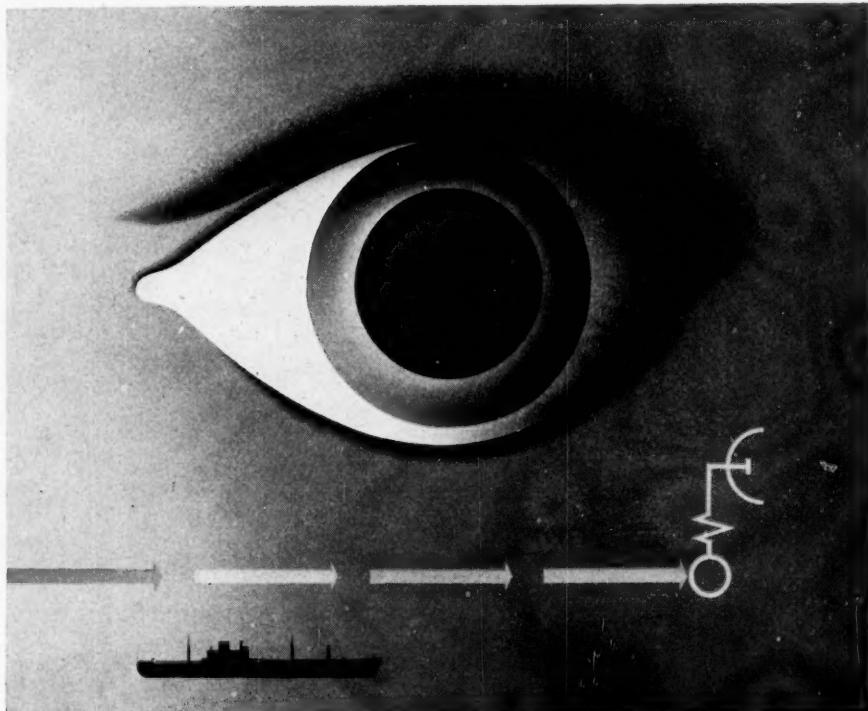
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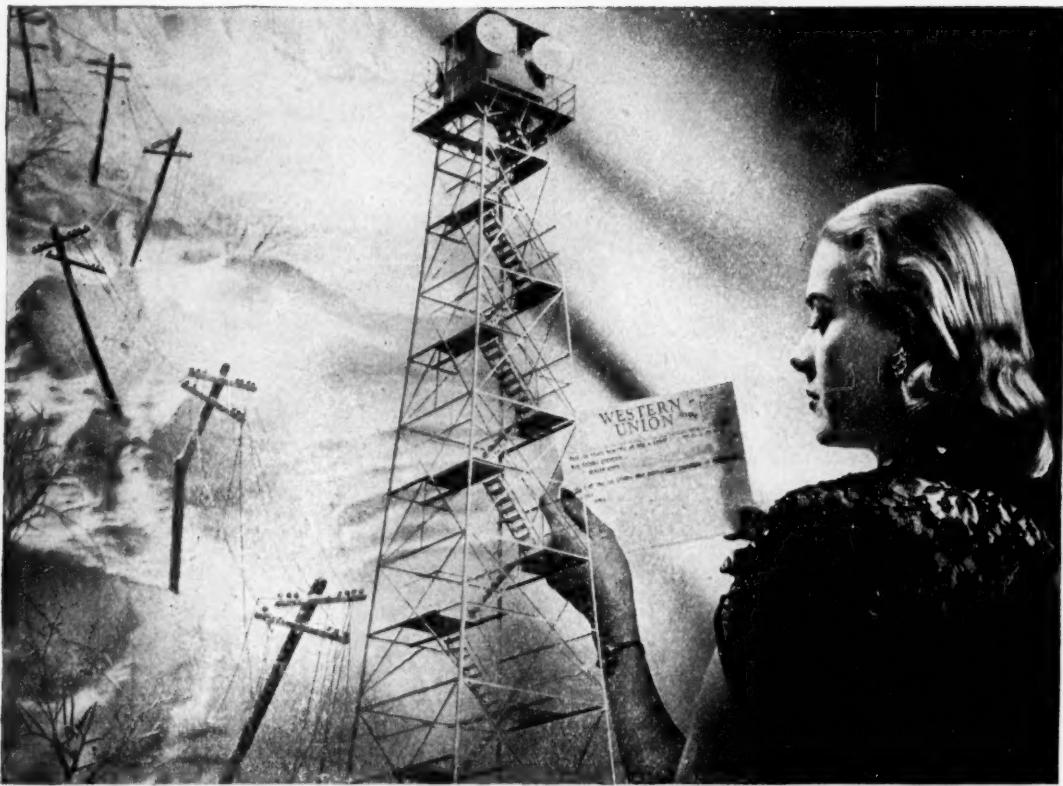
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Radio relay towers, about 50 miles apart, will gradually replace thousands of miles of telegraph poles and wires.

HOW TELEGRAMS "LEAPFROG" STORMS by means of new RCA Radio Relays

WITH this new radio-relay system, developed by RCA, Western Union will be able to send telegraph messages between principal cities without using either poles or wires. Severe storms will no longer disrupt communications.

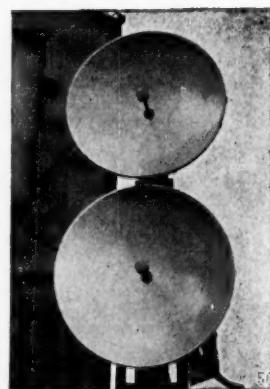
Radio-equipped towers, 100-feet high, spaced from 25 to 50 miles apart, replace the usual poles and wires. Each station, automatically and unattended, receives the transmissions from the previous station and passes them on to the next station. Installation and maintenance costs are far less than those of pole-line systems.

Operating on microwaves—extremely high-frequency wavelengths

heretofore used only for radar and other military equipment—this system provides the means of sending hundreds of telegraph messages simultaneously. Telephone calls, radio photos, facsimile, teleprinters, FM broadcasts can all be handled over the same circuit. Nation-wide television-station networks are a future application possibility.

An experimental radio-relay system of this type has now been operating successfully for almost a year between New York and Philadelphia. It is another concrete result of RCA's leadership in electronic research and development. Radio Corporation of America, Engineering Products Division, Camden, N. J.

RCA—For 27 years the Fountainhead of Electronic Research and Engineering



Two of the bowl-shaped microwave reflectors that are mounted atop the 100-foot towers. The cylindrical caps, at center, house tiny T-shaped, high-frequency antennas.



RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DIVISION, CAMDEN, N. J.

MARCH 1946

CONTENTS

IS THE BLACK DRAGON DEAD? <i>Otto Tolischus</i>	3	FMF TRAINING AFLOAT, <i>1stLt D. D. Nicholson</i>	25
THE ABUSE OF HONOR, <i>PFC Marty Sedgwick</i>	8	A BASIC SCHOOL FOR TECHNICIANS, <i>Capt Arthur Rose</i>	29
MARINE AIR-INFANTRY SCHOOL, <i>Capt James R. Ray</i>	9	OUR FUTURE DIS, <i>LtCol R. D. Heinl, Jr.</i>	31
AMBUSH IN CHINA, <i>Capt Walter R. Mansfield</i>	13	POSTWAR RECRUITING, <i>Capt F. T. Finucane</i>	33
BACK TO JAPAN, <i>Capt Edwin Klein</i>	17	STORMING FORTIFIED BEACHES, <i>LtCol R. E. Cushman, Jr.</i>	35
PEACETIME RESERVISTS	20	AERODROMES IN MID-OCEAN	38
CRAZY-QUILT OF IWO, <i>LtCol J. D. Hittle</i>	21	MILITARY DIGEST	43
WINGS OVER FUJIYAMA	24		

Picture Credits: Associated Press, Official Navy or Marine Photos.

This Month and Next

A DETACHMENT of 50 marines might have done the job better, but Capt Walter R. Mansfield was left to command a force of Chinese irregulars—command them through an interpreter. "Ambush in China" relates how he harassed the Japs behind their own lines with the little help he could get from a Chinese officer and a weird assortment of "wo-bings."

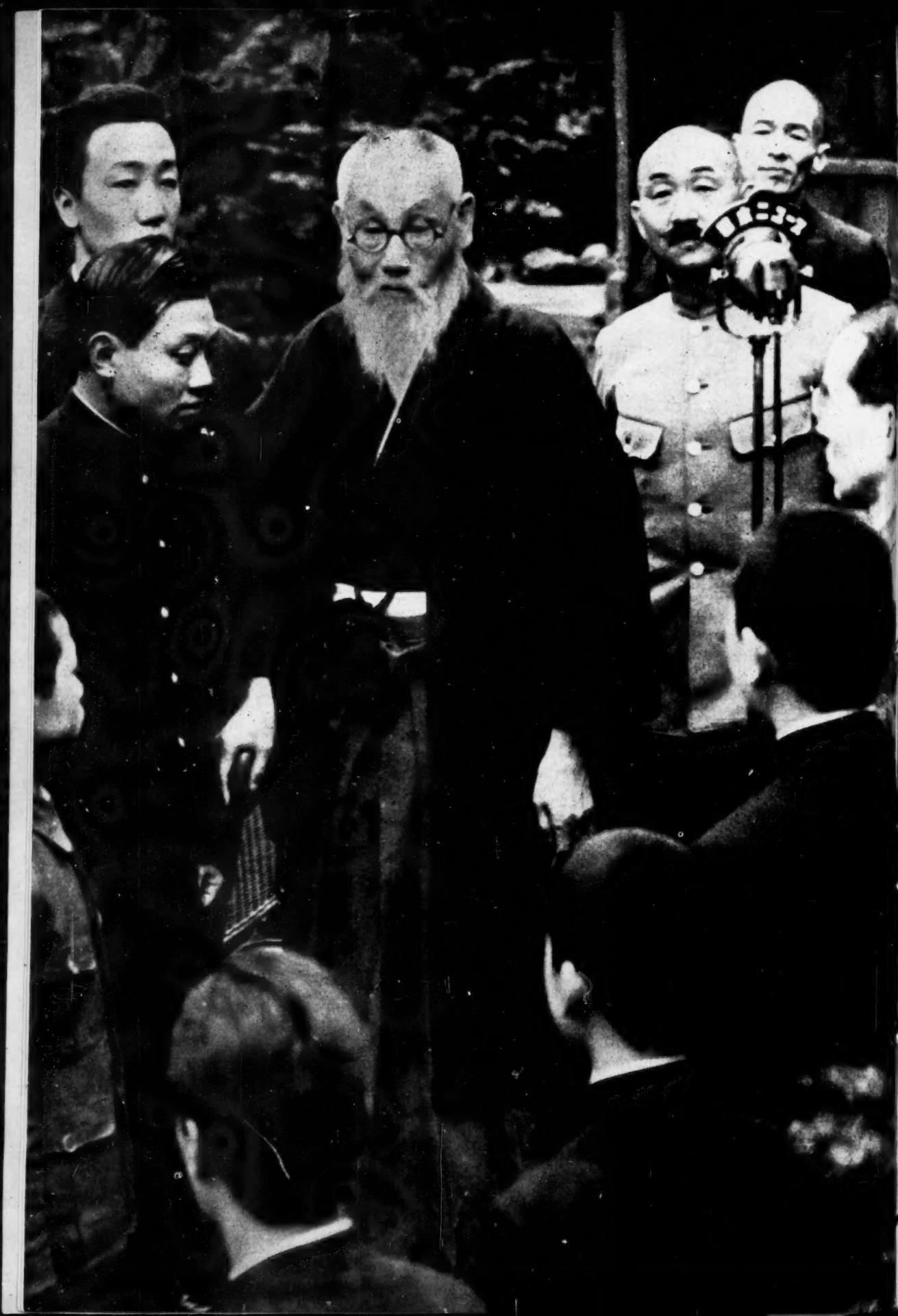
Officially the Black Dragon Society is dead and an Imperial Rescript has relegated the Emperor from his position as a god, but Japanese ambition and theology will not die overnight. Before the war, one man dictated policy to the government and to the military with a vicious treachery which the high courts of Nippon dismissed in the name of patriotism. On page two of this issue begins the story of the rise, decline and fall of the Black Dragon Society. Japan might again be a threat to the security of the Orient, warns Otto Tolischus, author of "Is the Black Dragon Dead?"

Iwo Jima was a strange as well as bloody battleground. Most of the bizarre aspects of the struggle for that desolate "Gibraltar of the Pacific" resulted from the small size of the island and the fact that

in approximately three and a half square miles there were concentrated 60,000 troops. In such a spot there is no field manual to cover the situation, but an intelligent way of using the fundamental principles of strategy and tactics is to be found on page 21 in the "Crazy Quilt of Iwo."

Aboard ship a detachment either may stagnate in its routines or, with an efficient training program, its members may be fully prepared for action with the FMF. Admittedly the flight deck of a carrier is not the ideal terrain on which to train a machine gun platoon, but it was done aboard the *Monterey* by 1stLt Dennis D. Nicholson, Jr., who tells how on page 25 in "FMF Training Afloat."

In its April issue, the GAZETTE will recall memories of the Cape Gloucester campaign and the small groups of amphibious scouts who reconnoitered New Britain weeks and months before the first landings to determine the feasibility of the operation. It was men like 1stLt John D. Bradbeer, who won the Soldier's Medal for his work, who helped former Marine TSgt George McMillan write the history of "Amphibious Scouting at Cape Gloucester."



Is The Black Dragon Dead?

Has the Black Dragon Society, powerful Jap underground, been dealt a final death blow by occupation authorities, or is treachery merely sleeping?

By Otto Tolischus

WITH the arrival of the Atomic Age, the potentialities of any future war loom as suicidal for victor and vanquished alike. The terrible cosmic lightning that was first exploded in the desert wastes of New Mexico and then consumed the teeming cities of Nagasaki and Hiroshima lingers in ominous afterglow on the horizon of all mankind. Scientists and statesmen are working frantically to discover means for controlling the dread force that together they have unleashed. Yet even as they strive to ensure world-wide and permanent peace, the inevitable repercussion of the new fear is a feverish increase of armaments, a race by all nations that can to throw up first-line defenses against the catastrophic onslaught of another war, while the victors attempt to disarm the vanquished and prevent the beaten from rearming.

Yet it is axiomatic that that which is forbidden openly will be practiced secretly. History proved that national armament is no exception to this rule, as witness the case of Germany after her defeat in World War I. According to the terms of the Versailles Treaty, Germany's armies, except for a token force of 100,000, were officially disbanded, her armament industries liquidated. But, ere long, para-military societies began to spring up all over the Reich, recruiting thousands of followers. Arms were secretly turned out in secret factories, some located in other countries; a secret army was enlisted, trained and equipped. The world learned of this "Black Reichswehr" when it rose in premature revolt against the regime which had created it. And out of the para-military organizations rose Hitler and another war.

We would be blind indeed if we did not anticipate underground attempts at rearmament to follow this war in both Germany and Japan. In Germany, with all her territory occupied by four powers, this may prove difficult, at least as long as the occupation lasts. In Japan, on the other hand, underground rearming may be expected to be much easier for several reasons. The first is that our occupation is confined to the key cities. The second is that the old Government, which managed to hide quite well Japan's real strength before the war, is still in power. And the third and most important reason is that Japan already possesses a basis for rearmament that Germany did not.

The German secret armies and semi-military organizations had to be created after the last war,

 **Mitsuru Toyama, Black Dragon founder, was "benevolent" to Chinese students.**

About the Author

This article marks Mr. Tolischus' second appearance as a GAZETTE author. His first story entitled, *FALSE GODS — FALSE IDEALS*, appeared in the November 1944 issue and was well received by our readership. Mr. Tolischus, author of *TOKYO RECORD*, became a member of the Berlin bureau of the *New York TIMES* in 1933 and in that capacity covered the development of the Nazi system and the outbreak of the European war. He was in Japan at the time of the Pearl Harbor attack and was arrested by the Japanese, but finally returned to New York where he is presently on the staff of the *New York TIMES*.

out of whole cloth, so to speak. Japan has long had innumerable societies, both secret and para-military, which flourished long before the war and will continue to flourish in the political underworld, unless drastic action puts an end to them. If a secret Japanese military force arises, the secret societies will form its nucleus. From these societies, too, will spring any future Japanese Hitler bent on new war. And out of them will come whatever deviltry some future Japanese war-lords may devise.

Ironically enough, it was an American, Commodore Matthew G. Perry, who sparked the juggernaut of Japan's modern militarism, of which the secret societies became a part. Perry's "Black Ships," which opened Japan to the world in 1853 after 300 years of isolation, persuaded the Japanese that the only way to beat the "foreign barbarians" was to learn from them the secret of their weapons and then add to them Oriental cunning and fanaticism. But while Perry's role in opening up the Pandora's Box of the East was coincidental, there was no element of happenstance in the fact that General Douglas MacArthur, as an initial move to establish firm control over occupied Japan, ordered the dissolution of the notorious Black Dragon Society.

It was an essential step in the right direction, but it is only the very first step—the laying-low of but one tree in a vast jungle that must be cleared away, root and branch, down to and including the underbrush. The Black Dragon is both the parent and the embodiment of the nationalistic secret societies which are so peculiar an outcropping of

the Japanese political and social structure. But the Black Dragon was not alone. There were many others.

Often, except for such mass organizations as the National Reservists' Association, these secret Japanese societies have numbered comparatively few members. Yet they have managed to extend their tentacles far and wide, not only throughout Japan but also through China, the East Indies, Oceania, even to South America and to the United States. Gangsters and terrorists, their members were often involved in personal rackets for personal gain. Nevertheless, in the peculiarly Japanese sense, these racketeers and hoodlums also called themselves patriots. Though divided among themselves, they nevertheless maintained their position and their strength by virtue of the fundamental concept of Shinto, the Japanese religion of conquest, which teaches that all Japanese are gods functioning under a chief god, the Emperor, whose divine mission it is to rule the earth.

Shinto, cleverly exploited by Japan's war-lords,



Hirosi Saito, former ambassador to the U. S.

fired the Japanese people with the spirit of conquest, transforming an entire nation of 73,000,000 into a race of fanatics. It also imbued the members of Japan's secret societies with super-fanaticism which often prompted them to slay their Emperor's closest advisers in the name of the Emperor himself. Such fanaticism became especially vicious when it subscribed to no recognized moral or ethical code except "The Way of the Gods," which is the literal translation of the term Shinto. For that "way," like the gods whose example is its only illustration, was conceived in a jungle age and therefore knows no other code than that of the jungle—a code based on savagery, cruelty, treachery and cunning in which the end justifies the means.

Moreover, the Japanese social and political structure itself facilitated both the formation and the functioning of secret societies. Headed by the God-Emperor who combined within himself all sovereign power, it leaves the Emperor's subjects without rights or voice in governing themselves, makes of them quite literally "children" to be guided, disciplined and kept on a fore-ordained track by a single all-powerful hand. With such concepts dominating the nation, it was inevitable that Parliament, established under a constitution granted by the Emperor as a "benevolent gift" to his "children," as well as the political parties composing it, should become mere puppets.

Unable to appeal to popular sovereignty for their authority, the Diet soon became an instrument, not of self-government, but only for "aiding the throne," and the political parties became tools of special interests, and thus corrupt. Neither Parliament nor parties were therefore able to command confidence, with the inevitable result that popular support, or, at any rate, popular tolerance, went to the exponents of direct action, even when "direct action" proved synonymous with "assassination."

The rest followed just as inevitably. Soon societies of "patriots" and "reformers" like the Black Dragon began to terrorize the populace, to intimidate businessmen, military leaders and statesmen. And when the milder forms of persuasion failed, they did not hesitate to start riots, foment revolts and conduct methodical assassinations. This gained them dominance of the political scene which, in turn, gained them the support of military and financial circles bent upon their own aggrandizement. The Maffia and Camorra in Sicily, Hitler and Mussolini in Germany and Italy, and to some extent Al Capone and his gang in Prohibition-era America, have shown that such methods are not confined to the Orient. But the Japanese secret societies are far older and more deeply entrenched than anything in the West.

They are, in fact, a projection of the old feudal Japan into the modern world. They are a clan; that is, they are based on the concept of a chieftain and followers who owe their chief unconditional



Former Premier Hamaguchi, whose election depended upon Black Dragon support.

obedience, unquestioning loyalty. They also rest on the old Japanese tradition of the Samurai, who, when they lost their masters, often turned bullies whose swords were for sale. In short, the secret societies of Japan consisted of strong-arm boys who proclaimed their patriotism and their allegiance to the God-Emperor but who served their cause according to their own lights, and not infrequently for personal gain; who dominated politics not by argument, but by sword and pistol; and who thereby became one of the chief instruments to plunge Japan and the world into war.

Their power and their popular support was such that the government was able to offer only covert opposition. The government never shrank from utilizing the most ruthless means to crush leftists elements, but its actions against terrorists from the right fell short of results.

Even if the culprits were actually brought to trial, they were permitted such latitude in proclaiming the purity of their motives as loyal followers of the Emperor that, as a rule, even when sentenced, they scored a moral victory in the eyes of the public and thereby frequently escaped serious punishment.

The main concepts which influenced these "pa-

triots" in the past, and which can not fail to inflame them in the future, are the Emperor's divine right to rule the world; the "liberation" of the colored races; and the extermination of the whites. These were the mainsprings of Japanese propaganda before and during the war, and, resting as they do on religious convictions, must be expected to survive defeat. For though Emperor Hirohito has renounced his divinity and has disclaimed any superiority for the Japanese race, the new tenets which he has proclaimed are still to be put into political practice. And even then generations will have to pass before the convictions of centuries are wholly rooted out. Indeed, as is corroborated by reports from Tokyo, the secret societies are already secreting arms, organizing skeleton forces of new armies, employing terror tactics to keep liberals from coming forward and are making themselves felt in the government. And the vociferous demands of American occupation troops to go home are grist to the mills of the fanatics.

Now they are still active throughout the Orient, stirring up strife and promoting Japan's unchanging aims, financing themselves, in part, by the traffic in drugs. Shanghai lists numerous Japanese

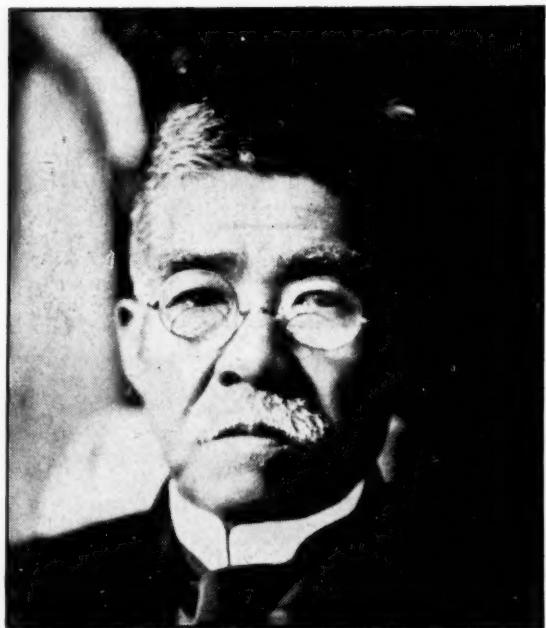
secret societies as operating in China. Against them, American troops are powerless, for they fall under Chinese authority; and while the Chinese leaders might well wish to stamp them out, they are primarily occupied with their own political troubles. In Indo-China and especially in the Netherlands East Indies, where the Black Fan Society devotes itself to fanning the flames of native resentment against the whites, Japanese influence is equally evident. And in Korea, they are openly sabotaging the American occupation.

Spiritually, the patriotic societies hail back to those Japanese intellectuals of the last century whose doctrine culminated in the exaltation of the State and the restoration of the Emperor to direct rule as against the usurpation of power by the Shogun, shortly after Perry's arrival. One of the most influential of these intellectuals was Yoshida Shoin, and one of Yoshida's pupils was the great Saigo, leader of the coup, in 1877, to oust the "red-haired barbarians" and restore the feudal rule of the Shogun and the Samurai. Saigo's revolt was defeated, whereupon he committed harakiri and became one of Japan's great heroes in conformity with the code of Bushido, or "the way of the warrior," which holds that enemies must be conciliated—when they are dead.

But among Saigo's cohorts was a young man of poor but Samurai family named Mitsuru Toyama. Instead of following his master in death, Toyama chose to submit to arrest in the hope of being able to carry on his master's work. Toyama's hopes were more than realized. For it was he who founded the first of the secret societies of modern Japan, the Black Ocean Society, which aimed at "collaboration" between Japan and China against the West and became the grandparent of all other societies. Toyama lived to be 90—he died on 5 October 1944—and in that long span of life he became more than the promoter of secret societies; he became their patron saint and the unofficial Emperor of Japan, whose home was a safe refuge for assassins which the police dared not enter. When he died he was hailed by the entire nation as one of its great sons, and was speeded to his ancestors amidst the splendors of a full-fledged State funeral.

Indeed, the career of Toyama, as well as his character, were so typically Japanese that one newspaper rightly declared: "To understand Toyama and his influence is to understand the soul of Japan." He held no office, delivered no orations, wrote no pamphlets; he rarely appeared in public, electing, rather, to remain a man of mystery. Though rich from the loot of the military enterprises he promoted, he scattered most of his gains among his disciples and lived the life of an ascetic in a modest house.

To enlist mass support, the Black Ocean Society at first affected a liberal front. It inculcated love of fatherland and worship of the Emperor, but it also



Dr. Suzuki led the Seiyukai party, one of the Black Dragon political organizations.

bespoke the rights of the people. Soon it was influential enough to attract the attention of the government, which utilized its services both at home and abroad—at home to promote the Government's electoral chances by terrorizing the voters abroad, to deflect the energies of those who did not take kindly to modernization into the outlet of foreign conquest.

In collusion with the militarists, agents of the society were dispatched to Korea to sow unrest. But this was merely a prelude for launching the Black Ocean Society's most ambitious demand—war against China. Toyama visited both Premier Prince Ito and Foreign Minister Okuma in an attempt to blackmail them into war. When Ito received Toyama he knew what was up, for Toyama made no secret of the fact that behind him were ranged assassins, ready to do away with the Prince should he refuse. The story is told that when Toyama asked the somewhat-deaf Prince if he should not approach closer in order that his message might be more clearly heard, Ito, in tones of mingled apprehension and resignation replied: "You are close enough." Nevertheless, the meeting ended in a draw, as Ito refused to accede to Toyama's demands immediately, though fully aware of the forces behind the drive for war.

The nature of these forces became clear enough when a Black Ocean assassin attempted to kill Foreign Minister Okuma. This was Toyama's first serious bid for power, which succeeded all the more when the would-be assassin became a popular hero and when Japan started war against China in 1894. And though Toyama was arrested, he was

released for "lack of evidence." A year later, Toyama showed what he could really do when Black Ocean Society members massacred the entire Korean Court, including the queen. This massacre caused such an uproar throughout the world, even in Japan itself, that Viscount Miura, Japanese envoy to Korea, was tried on charges of complicity, though he, too, was released for "lack of evidence."

In this war with China, Japan obtained her first foothold on the Asiatic continent, which was to be her basis for world conquest. However, Japan's profits from this opening battle were greatly curtailed by combined action on the part of France, Germany and Russia. France and Germany were inaccessible, but Russia was close at hand and astride Japan's path. Inevitably, war against Russia became Japan's next move. To prepare this war against the Russian giant, the Black Dragon Society was founded as an off-shoot of the Black Ocean Society in 1901. The name Black Dragon was significant; for Black Dragon is the Chinese name for the river Amur, and the Amur was thus proclaimed as the new goal of Japanese expansion.

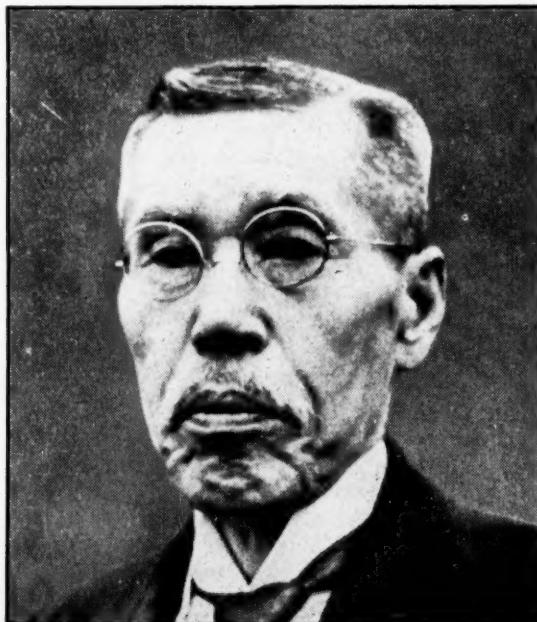
The actual founder and chief of the new society was Rioshi Uchida, one of Toyama's disciples, but Toyama was the power behind Uchida's throne. In short order, the Black Dragon Society became for the war against Russia what the Black Ocean Society had been in the war against China—the secret arm of the military and Japanese financiers, eager for the spoils of conquest. And though wholesale massacres were more difficult to stage, it became an organ of intrigue and espionage whose agents overran Korea, Manchuria and China.

An illustration of its methods (which recall more

recent events) is found in Uchida's organization in Korea of "The Society for the Celestial Salvation of the Oppressed" to train Korean collaborators and teach the Russian language. The "celestial" society's first propaganda campaign called for the abrogation of treaties hampering Japanese expansion. Later, this plank was securely nailed into the official Japanese platform and applied to all pacts that had become inconvenient, including naval disarmament and the Nine-Power Treaty guaranteeing China's integrity. Toyama again visited the Premier, this time to demand war against Russia, and though he again was met with initial reluctance, he triumphed once more when war against Russia was launched in 1904.

With this war, the Black Dragon Society and Toyama personally had risen to the height of their power. The Black Dragon itself never contained more than 20,000 members, but among them were some of the leading lights of Japan—admirals, generals, statesmen and intellectuals. Its outstanding front man was Foreign Minister Koki Hirota, who had been put through school by the Black Dragon Society and in his youth had received personal instruction from Toyama. Through them, Toyama was able to reach into the highest circles of Japan. And when Emperor Meiji died in 1912, Toyama publicly called on the Cabinet to "immolate itself"—that is, to commit *hara-kiri*, because it had failed to give the Emperor proper advice when he "neglected his health," a euphemistic phrase referring to the imperial drinking habits.

But Toyama never lost sight of Japanese expansion, even after the war with Russia, which established Japanese power on the Continent. He supported Dr. Sun Yat-sen and the Chinese Revolution, contrary to the official Japanese policy of supporting the Chinese throne, in the hope of being able to fish in troubled waters. He helped to found "The Union of Friends of the Chinese Revolution" as a transmission-belt for spreading Japanese influence through revolt-torn China, and when Sun Yat-sen fled to Japan, Toyama virtually forced the Government to permit him to land and for a while sheltered the Chinese leader within his house. In like manner and for the same purpose he became a protector of Chiang Kai-shek during the latter's sojourn in Japan as a military student, which explains why Japanese of the Black Dragon persuasion call Chiang a "black ingrate" and a "traitor to Asia" today. For at that stage in their careers, all three agreed on what later became the main premise of Japanese propaganda, namely, Asia for the Asiatics. Indeed, during World War I, Sun Yat-sen actually called upon Japan to assume leadership in freeing Asia from the Westerners, a project which culminated in embroiling Japan in China and finally resulted in her downfall.



Baron Kiichiro Hiranuma, Japan's wartime home secretary, had Black Dragon support.

(This is the first of two articles on the Black Dragon Society.)

The Abuse Of Honor

**There are men who still purchase
and wear ribbons they do not rate**

By PFC Marty Sedgwick

"GIVE me a Good Conduct ribbon, American Theater, Asiatic-Pacific and three battle stars."

The clerk bent behind the counter, fumbled with an assortment of ribbons, deposited the requested items on the counter and consulted a typewritten chart. "That'll be a dollar thirty-five," he announced.

Another "phony" had become a hero—for less than two dollars!

Many strong words have been written on the abuse of the privilege of wearing campaign ribbons and battle stars, often called "free beer chits" in the "slanguage" of the Corps. Headquarters Marine Corps, the Navy Department, various naval districts, and divisional headquarters' have issued strict orders against the unauthorized wearing of such decorations. Lower echelons and unit commanders have posted bulletin board notices at frequent intervals warning Marine Corps personnel against the practice. In spite of threatened disciplinary action, there are men who still buy and wear ribbons and combat stars to which they are not entitled.

The problem stems mainly from two factors. The disciplinary action promised seldom materializes, principally because too few commanding officers take the trouble to seek out and punish offenders. The greater cause lies in the ease with which ribbons and stars may be purchased.

Individual marines, both in barracks "bull sessions" and in letter to the *Gazette* have complained of the problem at intervals. The consensus of opinion has been that each man should be issued a card listing the ribbons and decorations to which he is entitled. The cards would be certified by commanding officers. The information set forth on the cards would be taken from the individual's service record book or other authoritative sources. If such action were undertaken by all commands and followed up with vigorous action by gate sentries and shore patrols, the problem would undoubtedly diminish.

Governmental action to stop the indiscriminate sale of ribbons and stars would help eliminate the practice. Hard won symbols of honorable service and dangerous duty are too easily bought. The

writer, with three courts-martial on his record, purchased a Good Conduct ribbon in a San Diego store recently! No questions were asked. The writer also purchased an American Defense Service ribbon, American Theater ribbon, an Asiatic-Pacific ribbon, and Victory Medal ribbon.

Although he is entitled to wear these last four, no attempt was made to find out if he was: A marine, known to this writer, purchased an American Theater ribbon, an Asiatic-Pacific ribbon and Victory Medal ribbon, all of which he is entitled to wear. Several hours later, the same marine appeared with two battle stars on the Asiatic-Pacific Theater ribbon. He had purchased them at the same store where he had bought the ribbons. In neither instance had anyone questioned him or demanded proof of his right to wear them.

In company with another marine, the writer recently visited five stores in San Diego. In each store, the writer asked for, and was sold, an Asiatic-Pacific Theater ribbon with a battle star, a European Theater ribbon with a battle star, a Presidential Unit Citation ribbon, and a commendation ribbon. The writer is entitled to the Asiatic-Pacific ribbon without a battle star. He is not entitled to a commendation ribbon, and has never been within 3,000 miles of the European Theater! In none of the stores did anyone ask the writer if he were eligible to wear the decorations purchased.

In the display window of one of the stores visited were the Honorable Discharge emblems that are sewn on the green uniform. Not having discharges in our possession, we did not attempt to buy any. In another store, metal Honorable Discharge buttons were set in the lapels of civilian suits coats displayed for sale. How these emblems were obtained the writer does not know. It is worth noting that they were identical in appearance with the metal emblem issued to dischargees. If a clothing store proprietor can obtain them for display, it is quite possible that individuals can obtain them for less honorable purposes.

It may be asked, "Why all the fuss over a few pieces of tin and cloth?" Here's why: These "few pieces of tin and cloth" represent honest service in a worthy cause. It is an injustice to thousands of able and worthy men that their fine and memorable work and the many real sacrifices that most of them made should be cheapened by indiscriminate sale and use of the ribbons they won. Every unthinking or unscrupulous marine who purchases and wears a ribbon or combat star to which he is not entitled is cheating on the recognition that was meant for men who have earned it.

Theater ribbons, combat stars, commendation ribbons, ribbons for awards for bravery or exceptional service, are recognition by the United States government on behalf of the American people. Let the United States government take action to prevent the abuse of that recognition by "chiselers" and "free beer artists."

END



A plane "strafes" the "enemy" lines as MAIS students study air-infantry cooperation.

Marine Air-Infantry School

The problem of close air support is a complex one, revolving about mutual understanding of related capabilities and limitations of air and ground officers. By Capt James R. Ray

YOU know the scene. The wreckage of the first waves spews like jetsam across the beach. Near you, an amphibious tractor flares. To your left, two medium tanks commence to move inland. Hundreds of shore party personnel busy themselves on the coral shelf, struggling with five thousand boxes, cans, and weapons. A column of shells marches through its warehouse.

The early hours are always noisy. Explosions, loud voices, machinery, small arms in action, and beneath them, like the steady spark of static, the aimless roar of the planes. Suddenly that roar becomes intelligent. The quick pass at the hill, the long dart of aimed rockets, the tiny flickering at the wing. Empty cartridges and released links are falling on the forward troops. Your legs ache. "Now that's the way to fight the war!"

But the pilot's pass and the infantryman's comment are only a part of the problem of effective close air support. The total problem is an exceedingly complex one, revolving about communications, target designations and mutual understanding of related capabilities and limitations on the parts of air and ground.

Realizing the confusion and antagonism which inevitably result when specific combat techniques, requiring joint action by two or more arms, are employed without understanding basic differences, Headquarters, U. S. Marine Corps, ordered the Marine Air-Infantry School founded as a part of

the Marine Corps Schools at Quantico, Va.

But what, *exactly*, is to be accomplished by such a school? The answer to this question lies in a succinct yet comprehensive study of the school organization itself.

The Main Mission—The primary mission of the Marine Air-Infantry School is to further mutual understanding of related problems among aviation and infantry officers. At the Marine Air-Infantry School, such mutual understanding is furthered by providing the aviation officer with a broad outline of infantry organizations, weapons, and tactics through the regiment, and the ground officers with a similar outline of all pertinent factors concerning the functioning of combat aviation, making ground-conscious air officers and air-conscious ground officers.

From the resulting development of new perspectives, the secondary aim of the school is realized. This is the gradual emergence in the minds of its student officers of the fundamental reasons underlying common failings in coordination of air support and infantry units in the field. This is not to imply that *specific* solutions to *specific* aspects of the close air support problem are presented by the school. The school provides the student with certain sets of facts to use as weapons. The student must still aim and fire those weapons if he is to find a practical solution to the problem.

During the immediate prewar years and the ini-

tial war years themselves, the policy of the Marine Corps was to draw new junior officers largely from universities throughout the country and from the Naval Academy. The maintenance of this policy, however, revealed two inherent flaws; the inability of such a national pool to provide the necessary number of young officers needed, and the fact that exclusive reliance on such a pool denied the Marine Corps the maximum use of certain highly qualified enlisted personnel as potential officers.

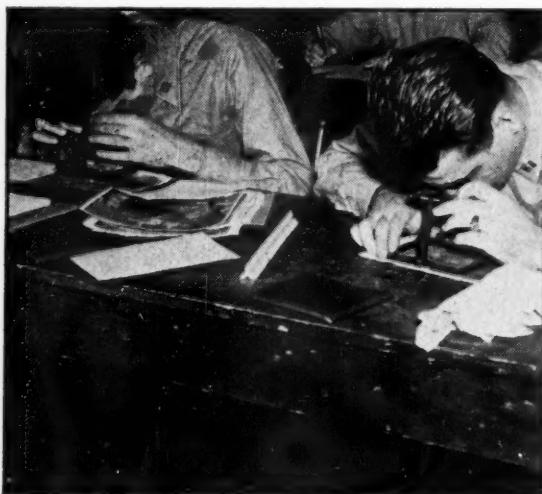
Seeking to eliminate these two flaws, the Marine Corps instituted the policy of commissioning officers in the field. Many enlisted men who proved themselves outstanding on the battlefield were rewarded with spot commissions. Their practical knowledge was generally adequate but they sometimes lacked administrative training. Merit had won them their commissions; necessity demanded that they be formally educated at the earliest opportunity.

Closely joined with this problem was the problem of certain officers who had spent their commissioned life either aboard ship with marine detachments, in navy yards on special duty, or on other particular assignments which tended to separate them from ground or combat knowledge.

What Marine school was fitted to offer additional training to such officers? Platoon Commanders' School was questionable; only enlisted personnel attended. Command and Staff was equally illogical; it presupposed more than basic training as well as higher rank. The logical answer lay in instruction at the Marine Air-Infantry School.

All students at the Marine Air-Infantry School range in rank from second lieutenant to major. Individual classes have averaged 90 students each, of which slightly more than half have been aviation officers and the remainder general duty. Backgrounds and reasons for selection differ widely but generally the patterns are those of the following two examples:

Capt Murphy, an aviation officer, has 1,000 hours



Student officers learn aerial photo reading.

in the air, and has downed four enemy planes in combat. He is the product of the 1941 plus speeded-up training program, which fitted him with highly integrated skills and knowledge for combat air performance, but he is not a graduate of any Marine basic school. What knowledge he has of organization, administration, training and leadership he has developed either by himself or under the direction of his immediate commanding officer. He knows as little of such problems as his infantry classmate, Capt Rogers, a former platoon sergeant commis- sioned in the field. Rogers participated in the campaigns at Guadalcanal, Cape Gloucester, and Iwo Jima in all of which actions his conduct was uniformly exemplary. This is, however, his first opportunity to gain a formal military education. Viewed from the aviator's standpoint, his knowledge of close air support problems is vague.

These two captains, then, represent generally the diversity of background to be found among MA-1S students. The mixture is an eminently healthy one and tends toward fostering mutual understanding.

All instructors at the school are members of one of three sections: General subjects, air and infantry. The first section includes instruction in administration, map reading, naval law, etc. The second deals with close support aviation, aviation operations, air defense, etc., and the third with infantry tactics, infantry weapons, cave warfare, etc.

Mixed personnel is again the order. Aviation officers instruct air subjects; infantry officers instruct ground tactics. The general subject section is composed of both air and ground officers. All instructors have proved themselves in combat either in the air or in the field.

Upon arrival at the Marine Corps Schools, they are assigned to the Instructors' Orientation Course, for intensive two-weeks' instructional period in which they study student psychology, patterns of learning, methods of presentation and the use of modern training aids. They are also screened for suitability in instructional duty.

Those officers who become instructors continue to be screened. The Chief Instructor, Marine Corps Schools, maintains a constant check on both the quality and validity of their instruction through his Tactical Inspectors' Section, and within the Marine Air-Infantry School itself, the three section chiefs are directly responsible to their commanding officer for instructional efficiency.

Thus, the instructional staff of the Marine Air-Infantry School is composed of officers who are carefully selected to uphold the instructional standards of the Marine Corps Schools as a whole.

In addition to this instruction staff, an administrative staff is maintained. The same heterogeneity which characterizes both student and instructor personnel exists throughout this department. For example, the commanding officer of the school is an aviator; his executive officer is a ground officer.

The primary aims of the administrative staff are

to put into execution the policies of the commanding officer, to maintain discipline, to carry on routine administrative business and to satisfy the legitimate needs of students and instructors. The administrative and instructional staffs cooperate closely in solving mutual difficulties. The goal of the instructional staff is uniformly outstanding presentation; the goal of the administrative staff is the creation of an environment which fosters such presentation.

The School Curriculum—A survey of the school curriculum offers the most detailed illustration of the duality of purpose which is the school's mission.

Recall that the aviation and infantry students, although officers of highly technical background, generally lack basic school education. And bear in mind that both officers mainly know the close air support problem only from their own standpoints.

The curriculum should therefore aim at satisfying the two basic needs of such officers, a general military education, and a general familiarization of both sides of the close air support problem. Here the weight in hours devoted to general education is somewhat greater than that allotted to air-ground familiarization. This does not mean that air is slighted in favor of ground tactics. It merely indicates that intensive study of air tactics of necessity becomes too highly technical to be suitable to the school. Basic training implies ground tactics, administration, naval law, service customs and courtesies, etc., while aviation training implies a single specific, highly integrated set of combat facts. Assimilation of these facts would require considerable pre-conditioning which the MA-IS general duty officer has not undergone.

An outline of maximum total hours for all students undergoing the 16-week schooling period includes 576 hours and is as follows: General Subjects, 160; Air Subjects, 127; Infantry Subjects, 250; and additional Air or Ground Subjects, 39.

Including both air and infantry subjects, the school curriculum is difficult in direct proportion to prior background. The necessity of maintaining individual high standards tends to cause student officers to seek unofficial assistance.

School Equipment and Facilities—The Marine Air-Infantry School is one of the subordinate schools which make up the Marine Corps Schools. In consequence, equipment and facilities are limited only by the resources of the parent institution.

MA-IS deals with problems of close air-support, and over half its students are aviation officers assigned to the school under "flight orders continued."

Two Marine air fields, Brown and Turner, directly adjacent to the main base at Quantico, provide combat planes for close support problems (flown, incidentally by MA-IS aviation officers and carrying general duty officers in the rear seats), as well as planes for all aviation officers to use in order to complete their monthly flight time.

In addition, normal equipment and facilities peculiar to all military schools are of course available.



Terrain appreciation classes in the field.

Training areas totalling approximately 40,000 acres, classrooms, recreation rooms, the Post Theater and Post Exchange are some of these.

The school presents a decided departure from traditional Marine Officer Corps education. For the first time specific results are attained through deliberate mixture of officers with diametrically opposed backgrounds in a common school.

The logical continuance of this idea could result in a revolutionary type school system for Officers Corps' education. A master school whose pre-dominant thread of instruction is general education common to *all* Marine officers is not in itself radical. But as organic parts of such a school, special instruction in the technical basics of aviation, field artillery, communications, landing operations, staff functioning, ordnance would be needed. Equip this school with specialized instructional sections, composed of officers foremost in their fields and integrated by a single over-all planning staff, assign student officers from all branches of the Marine Corps. The officer who has been specializing in artillery is reindoctrinated in basic studies both through instruction and close association with members of all other branches. Simultaneously, he receives instruction in his specialty, a review of artillery principles with classmates representing all other branches; a further amplification of new techniques in split classes attended only by artillerymen. An identical procedure would be followed with regard to the communicator, the infantryman, the staff officer, the aviator.

Modern warfare and its complex weapons demand increasing comprehensiveness of knowledge on the parts of all Officer Corps who wish to be successful in the field. The Marine Air-Infantry School is one indication of that progressive attitude of mind in the U. S. Marine Corps which will insure its continued success in future operations. **END**



Ambush in China

Although their operations failed to meet

Marine standards, these Chinese guerrillas managed to make things difficult for Japs trying to maintain vital communication lines in North China.

By Capt Walter R. Mansfield

IT WAS a perfect site for an ambush. There, almost at my feet, lay a stretch of the main Jap-held motor road through the famous "Corridor," the vital Jap lifeline of communications and supply from Peiping in the north to Kwelin, Hongkong, and the enemy's Southeast Asia empire, which was now rapidly crumbling.

A set of low hills, covered with shrubs and scenery, ran right down to the road. To the north, the road extended in a straight line for over 600 yards, passing over a crazy-quilt of flat, water-filled rice paddies which offered no cover on either side except two parallel ditches. Then it disappeared behind the hills. Below us was a deep cut and to our rear lay a maze of hills and more rice paddies. Intricate foot trails provided an excellent escape route.

For this ambush I had taken along the best 300 out of some 500 odd Chinese guerrillas who had been organized and trained by a small American combat team of men assigned with me by the Office of Strategic Services. With me were two American members of our team, Corporals Cedric Poland and John Owens, as well as the two most trusted Chinese interpreters, "Chee-chee" and "Susu."

Our plan was to ambush any sizeable Jap truck convoy which might come along this road. Our armament consisted of four bazookas, 40 rockets, 6 LMGs, 30 Tommy guns, 25 carbines, and several hundred "Gissimo" 7.9mm. rifles.

I directed the riflemen to spread out and take cover in the bushes on the little hills running down to the road. Then we placed the LMGs in the hill posts where they could command the best enfilade fire. As usual we had trouble persuading the bazooka teams to get down close enough to the road so that they would not miss the target when it appeared. It was only after Corporals Poland and Owens went down with the bazooka teams that they were set. Now everything was secure. We settled down to wait in the penetrating cold of this dull, overcast day.

For two months now, we had been located in this "pocket" behind the Japanese lines in China, near the strong enemy base of Hengyang and the "Corridor," which the Japs relied upon to feed arms and supplies to their armies in the south. In December, 1944, I had been ordered by the OSS to get into this "pocket," organize and train the Chinese guerrillas there, and do everything pos-

sible to disrupt Japanese communications and supply along this vital enemy road.

While the "pocket" was surrounded on all sides by Jap-held roads and territory (occupied by about 15,000-25,000 Japs) the intricate maze of hills and rice paddies provided an area over 20 miles square in which we could safely operate.

The Nips seldom ventured into this hinterland because they would lose their way quickly on the narrow, deceptive foot-trails which wound through the mountains, and could easily be ambushed and stampeded by much smaller guerrilla forces. Whenever a Jap force of any size was detected moving into the hills to get us, word was passed like wildfire by the Chinese so that we were never caught unaware. Most Chinese did this not because of any strong patriotic zeal. The real reason was the ancient Chinese "Paochia" system, under which each village headman would be executed by the guerrillas if he did not immediately notify them.

Nip control over the main motor road was an entirely different matter. Here they maintained a rigid patrol system to insure safe passage for their trucks. Garrisons and block-houses were set up at three-mile intervals. All bridges were guarded. Truck convoys, ranging from 30 to 90 trucks and

About the Author

Capt Walter R. Mansfield, who authored "Marine with the Chetniks" (Jan.-Feb. Gazette) has had a colorful career in the Marine Corps. Most of his time has been spent in enemy-occupied zones, such as Yugoslavia, Burma, Ceylon, Malaya, and China, rather than in organized, tactical battles. Capt Mansfield was sent to Yugoslavia in August of 1943 where he fought with guerrillas, harassing the German forces. From December of 1944 until June 1945, he went behind Japanese lines with a small avenger group to conduct ambushes and raids on the Japs' main communication and supply lines. From June 1945 up until the end of the war, he moved to North China where he had charge of teams which parachuted into prison camps at Mukden, Peiping and Wehsein for the evacuation of American POWs. His most important assignment was the rescue of Generals Wainwright and Beebe from Jap POW camps.

 Capt. Mansfield (left) displays some Jap weapons captured by guerrillas.



Primitive sampans were used to ferry guerrilla troops across "Corridor" rivers.

protected by at least two tanks at the front, would usually venture out every night after dusk. Because of the constant threat of American bombers they seldom moved by day, unless the weather was bad. Today, because the sky was overcast, there was a good prospect of our intercepting a convoy.

Suddenly, we heard the rumbling exhaust of a motor, gradually growing louder. Quickly we moved into position, unlocked our pieces and got ready. Maybe this was it! About a half-minute later a lone Jap truck, about the size of a Dodge 1½-ton job, appeared around the bend and roared up toward us. I was disappointed not to see others following it.

Foo SzLing, senior Chinese officer with me, became excited, grabbed up his whistle and moved it toward his mouth. Owens and I both lunged forward and grabbed the whistle out of his hands just in time. After all the trouble I had gone to in order to stage this ambush, I was not going to see it wasted on such small fry as one lone Jap truck. We would wait for bigger game. "Chee-chee," my chief interpreter, explained our actions to Foo, who appeared distinctly unhappy over our failure to attack.

The truck passed. In the rear, were about ten Japs, quite unaware of how close they were to annihilation. A few minutes later, another truck full of supplies appeared, and had all I could do to check our men, whose eyes gleamed at its contents.

We settled down once again to our long wait in the cold. As I sat there freezing, I thought of all the bitterness and trouble we had experienced in reaching this unpleasant location. I had been assigned to this duty in early December, 1944. It had all seemed very simple when the general officer, making the assignment, nimbly ran his fingers

over the map to point out my ultimate destination. Since then I had traveled more than 800 miles overland from Kunming under difficult conditions. I was now over 200 miles east of the nearest American advance outpost in central China, which was located at Chihkiang. Between the rigors of the trip, made in coldest winter, the lack of essential supplies and food, and the difficulties in training and operating with our Chinese allies, I had been through a special kind of hell in a few months.

First, there had been the trip overland. The first 750 miles, from Kunming to Chihkiang, ran through the so-called "free China." Driving two 2½-ton trucks over narrow, back-breaking roads took us seven long, exhausting days. At some points, the road wound back and forth up the side of a mountain so many times that it looked like a layer cake.

Then, we had marched overland to Wukang, Chinese Army headquarters and hopping-off point for our 200-mile trek overland through the Jap lines to the "pocket." Wukang is one of those ancient, sleepy, walled cities of interior China where everything goes on today just as it probably was 2,000 years ago. It boasts not a single wheeled vehicle, not even a cart. Everything is moved on the shoulders of coolies.

In Wukang, which had probably not seen more than a handful of white people during its entire existence, we few Americans were a curiosity. Men and women would stand at a distance, while children swept in closer to mimic. Anything we strange white people did was good for a laugh!

We began to learn some of the rigid customs and formalities which are religiously followed by all Chinese as part of the studied pattern of their everyday life—and which are essential prerequi-



Guerrilla troops gather round OSS-Chinese leaders to get instructions for ambush.

sites to getting them to act! I found that hot tea must always be served to a visitor upon his arrival, even though the "tea" consists of nothing more than a few green leaves in dirty water. A Chinese must clasp his hands together before accepting a cigarette tendered him. A host is considered most impolite if he does not walk with a departing guest beyond the threshold of the house and bow. At dinner, the guest of honor must sit in the chair facing the front door. No matter how sumptuous the meal, the host must, in accordance with polite custom, apologize for the "poor meal" he has set out for his guests. One never directly voices one's disagreement with what another Chinese has said. It must be done in a roundabout way, in order to save him face.

For a group of healthy Americans out to get things done in a hurry, it was a difficult task to conform with such time-wasting procedure!

The Chinese commanding general of the 74th Army at Wukang gave me two companies of his "best troops" to escort me over the long, tortuous route through Jap lines to the "pocket." They turned out to be characteristic soldiers—as carefree and cheerful as Chinese soldiers always are. We spent three weeks steadily training them in basic infantry weapons and tactics.

Finally, my little group of about 300 men was ready to depart for the pocket. Our 2½ tons of equipment (including rifles, ammo, explosives, bazookas and radio) were broken down into small bundles so that it could be borne by 70 to 80 coolies, each of whom could carry about 75 pounds a day for 20 miles. We left Wukang midst much ceremony, including a barrage of firecrackers (the Chinese have no sense of security). It was like a day at the circus!

For the next 15 days, from early morning till late afternoon each day, we marched in single file over winding, ancient stone trails which ran through rice paddies and mountains. It reminded me of pictures of the Klondike Gold Rush in Alaska—vile weather, poor food, trails covered with snow, mud and ice.

These amazing Chinese soldiers and coolies possessed nothing—absolutely nothing—in the way of bedding equipment, and very little clothing. They ate two meals a day, consisting of several bowls of rice with a few greens and, if they were lucky, a little pork. Upon camping for the night, they would gather around charcoal fires in cold rooms of the village mud huts and would huddle together under a few borrowed dirty, thin blankets. I am sure that not a single one of them ever removed or washed his clothes during the entire trip. We Americans were beginning to tighten our belts as we got used to two meals a day of rice, pork and greens.

My greatest difficulty during this trip was with our coolies rather than the Japs. The coolies were a miserable lot and for the first few nights a certain percentage would always escape during the night. This would delay the following morning's departure until some of our Chinese troops went out and forcibly rounded up a few protesting farmers into what we called our "volunteer reserve." Then I started paying the coolies \$100 (about 15c American money) a day. They were so pleasantly dumbfounded that they stuck with me after that!

Passing through the Jap lines proved to be a relatively simple matter. The "line" consisted of a Jap-held motor road in which there were plenty of gaps which were poorly patrolled. We easily passed our entire train through one of these gaps



Capt Mansfield, back row, center, poses with his combined OSS-Chinese staff.

at night, less than a quarter of a mile from 500 sleeping Japs!

Now we were in the "pocket." Guides took us over a day's winding march through the hills to the little village of Tiento, temporary headquarters of Chao SzLing, guerrilla chieftain for the area. We stored our equipment under guard in some old Chinese temples and I went to meet this leader, with whom I hoped to work in the future, and to whom I had many letters of introduction.

Chao appeared at first blush to be a most affable character—a short, wiry, energetic, smartly-dressed little man of about 40 years. He never ceased to flash his toothy smile at us, and to show off by barking out orders to the guerrilla officers who formed his immediate entourage. A Chinese Regular Army officer, he had been sent out to this territory over five months before to organize guerrillas. Now he had a group of about 1,000 men. On the following day we saw about 500 of them. They were a ragged, poor-looking lot and only about one-half possessed weapons, mostly "Gissimo" 7.9mm. or captured Jap "Arisakas," with very little ammunition. Gradually I began to learn that they were carrying out only sporadic operations, due to lack of equipment.

For one month, we worked on a hard training program, teaching them all we knew. We set up rifle, bazooka, machine-gun and demolition ranges. Bazooka and demolitions squads were formed. Long hours of instruction were given every day. At times, it was almost unbelievably disappointing. Most of the Chinese had such poor eyes that they could not hit the side of a barn door at 100 yards! Despite these handicaps, we were able to get

about 400 men (out of 1,000) whom we considered passable. Meanwhile, I was maintaining regular radio contact with American base headquarters and more supplies were beginning to pour in overland.

During this first month, we were forced to move around quite a lot, from village to village. Chinese troops usually camped in the dingy, mud huts of these primitive villages. Upon entering a town, I would try to find the best house for an operations headquarters. Usually my "office" would consist of a dark, dirty, little room in an old stone house—probably as primitive as houses were in China over a thousand years ago—with uneven, earthen floor, wood lattice window (with no glass, of course).

Outside the window of my headquarters, there were always a few polished bald Chinese heads peering silently in at the curious-looking American, fascinated by anything I might do or say. Many undoubtedly had walked over ten miles to see their first white man. At first I did not mind, but as time went on the novelty disappeared and a great temptation came to dispel them by force. I would only restrain myself when I realized that I would never be understood and that face would be lost.

Despite the unsanitary conditions which prevailed we managed to avoid most illnesses and dysentery by rigidly following the rule that all water must be boiled and all food cooked.

A meal of rice was very filling, but after a few hours, it would leave us all hungry. We missed

(Continued on page 39)



Hundreds of Jap repatriates line the wharves preparatory to being assigned to LSTs.

Back to Japan

For nearly ten years, the Japanese played the role of swaggering conquerors, but now they are being herded like cattle aboard overcrowded LSTs for the dismal return trip to their homeland.

By Capt Edwin Klein

IN THE bright hard light of China's winter sun with a cold wind ripping across the Yellow Sea, a file of battered Japanese army trucks jounced out on one of Tsingtao's modern, cinder-filled piers. Their cargo included Japanese civilians and their meager belongings, packed in straw suitcases or cloth wrapped bundles. Marine sentries herded them into wire pens.

White-capped Chinese customs officials and black-uniformed policemen began to search each family's possessions for contraband. The Japanese women, looking doll-like in their kimonos and obis, formed a queue at the sagging Marine hospital tent where they were searched in privacy.

After nearly ten years, the Japanese who had come to exploit North China were going home.

Each person is allowed to take 1,000 yen, food for five days, and a reasonable amount of clothing and personal effects. Forbidden are gold and silver, securities, excessive amount of jewelry, cameras, binoculars or precision instruments.

Having been searched, they were allowed to rebundle their belongings and were assigned to one of the three LSTs leaving that day for Kago-

shima at the southern tip of Kyushu. The loading was supervised by Capt Ernest B. Price of Los Angeles, a civil affairs officer with the Sixth Marine Division.

From the bridge of LST 807 the skipper, Navy Lieut George D. Straight of Hartford, Connecticut, watched the proceedings. It was the 25th anniversary of his enlistment in the Navy. Ever since Guadalcanal, when he had been with the beach party from the old *MacCauley*—the transport lost at Rendova in July '43—he had been hauling marines about the Pacific. He had no particular love for the Japanese.

The deck of the LST was piled high with the personal gear of the departing Nippone. On each side two wooden latrines, flushed with sea water pumps, had been built.

When LST 807 went in at Iwo Jima, it had carried half an artillery battalion from the Fifth Division, 450 marines and their combat equipment. After unloading, the tank deck had been turned into an emergency aid station.

Now down below on the tank deck, 800 Japanese civilians prepared to make the best of the three



Japanese refugees alight from trucks which brought them to the embarkation center.

and a half day voyage to Kagoshima. It would be an uncomfortable trip.

For the passengers, there was rice and three cooking kettles, two steam lines and a fresh water line. For the rest, they would have to depend upon their own supplies.

By the terms of its surrender, Japan was supposed to provide enough ships to transport all Japanese from China and the northern stolen countries taken by the Japanese beginning with 1931. However, less than one-tenth of Japan's pre-war merchant tonnage was still afloat—American naval engagements and the deadly submarine warfare had sent to the bottom the other nine-tenths.

Japan's battered merchant marine is unable to evacuate all of its own nationals, and while American naval vessels have to be used, there are no luxury cruises. LSTs repatriating Japanese troops are even more crowded, being loaded with 1,400 disarmed Nips.

Hordes of refugee Japanese who had fled before the sudden thrust of Soviet forces in Manchuria, had already descended on Peiping and Tientsin from the areas formerly under Japanese domination. When the Marine repatriation section began operating, first on the program was the handling of the thousands of refugees who had come by foot, car, truck and train from Manchuria, Inner Mongolia, and all the northern provinces of China where their lives were endangered by the sudden turn of events which brought an end to the war.

Figures vary on just how big the entire repatriation program is, but it is estimated that at the time of the Japanese surrender there were 350,000 troops and a similar number of civilians in Shan-

tung and Hophe provinces, the zone of operations for the Third 'Phib Corps.

Repatriation from the Tientsin area began on 22 October when the Jap ship *Enoshima Maru* sailed from Taku with nearly 3,500 military passengers. This was only 16 days after the Japanese formal surrender in Tientsin to the American expeditionary force. By 10 December, over 80,000 Nips had sailed from Taku.

In the repatriation program, shipping priority is given to the northern ports over the southern for climatic reasons, and military repatriates take precedence over civilians. The Japanese seem to realize that they are through in China. Only 20

Jap Evacuation Statistics

Headquarters of the Third Amphibious Corps announced the following facts concerning the evacuation of Japanese from North China (North China is taken as the area north of the Yellow River and south of the Great Wall). Approximate number of Japanese in North China as of 1 October, 1946: Japanese military—224,456; Japanese civilians—320,268; total—544,724. Evacuated from North China ports (Tientsin, Tsingtao, Chinwangpao) up to 15 January, 1946: Japanese military—80,178; civilians—86,690; total—166,868. Remaining to be evacuated: Japanese military—144,308; civilians—233,332; total—377,640. Estimated figure of the rate being repatriated each month is approximately 50,000 each month.



Japanese open their belongings to be inspected by Chinese and American authorities.

per cent of the civilians evidence any desire to stay.

Evacuation from Tsingtao began on 23 November when LSTs removed approximately 5,000 Navy, 2,000 Army, and 1,000 civilian males. First evacuation of family groups began on 6 December when the Jap freighter *Tatsuki Maru* sailed with 3,300 passengers, mostly women and children, the very old and the very young, the sick and the pregnant.

LARGE segments of the Japanese army have not been fully disarmed but are being used by the Chinese to guard the few remaining miles of functioning railroad from rebels and bandits.

And from the interior far beyond the scope of Marine or Chinese influence, large groups of Japanese civilians and troops must run the gauntlet before they can hope to be evacuated.

Typical of these isolated areas is Tsinan, the railroad terminus at the base of Shantung Peninsula, and 350 road miles from Tsingtao. From Tsinan, it was reported that 10,000 partially disarmed Japanese troops were escorting 10,000 civilians in the tough mountainous hike to Tsingtao.

Not all Japanese are available for immediate return to their homeland. The Chinese government has ruled that all property owners must liquidate their holdings. In the Tsingtao area, that is one in three. Also certain classes of technicians, particularly railroad workers and mechanics, must remain for a time and help rebuild China's shattered communications and utilities.

END



A Jap civilian is searched by Chinese police.

Peacetime Reservists

The Marine Corps plans organized and standby units for postwar training.

THE Marine Corps will activate two forms of Reserve to enable men to resume their interrupted careers in civilian life and still retain the benefits of affiliation with their chosen branch of service.

The peacetime Marine Corps Reserve is to consist of a ready, or organized, component and a standby component. All personnel released from active duty who enlist, reenlist or continue in the Reserve are first assigned to inactive status, and will learn of the formation of the Organized Reserve through public announcement. Those who thereafter volunteer and qualify will be assigned to an appropriate unit in their geographical area. The remainder will be placed in the standby component.

Units of the Organized Reserve will be located in as many geographical areas as are consistent with other military considerations. Units of aviation, infantry and its supporting arms will be established, providing opportunities for specialized and technical training.

All training will be closely coordinated with the Fleet Marine Force to assure that all personnel are kept abreast of latest developments and doctrine.

ALL officer and selected enlisted personnel of the Organized Reserve may extend their military training by attendance at service schools and enrollment in correspondent courses offered by Marine Corps Schools. Officers may accept temporary active duty within or outside the continental limits of the United States. They will be reassigned periodically in order to familiarize themselves with a variety of command and staff studies. Promotion will be dependent upon actual demonstration of command and staff ability at appropriate level as well as on length of service in grade.

Selected enlisted personnel may accept detail to temporary duty with the Fleet Marine Force, and, following application and qualification, to platoon leader training necessary for appointment to commissioned rank. Rank of enlisted personnel of the Organized Reserve will be identical with that of the regular Marine Corps, and promotions will be based on similar requirements.

Members of the Organized Reserve will be required to attend weekly two-hour drills and to perform active duty training in the field for 15 consecutive days each year. Officer and noncommissioned officer classes, as well as field problems and range firing, may also be conducted with attendance voluntary. All training will be with modern, accepted types of arms and equipment.

Personnel will be paid for weekly drill attendance at the rate of one-thirtieth of the monthly base pay prescribed for their rank. Active duty training involves full pay and allowances for the rank held.

ALL members of the Organized Reserve are obligated to active service only in the event of war and national emergency and cannot otherwise be called to active duty in time of peace without their consent. Required attendance at drills and active duty training will apply only to members of the Organized Reserve, membership in which is voluntary. Members of the standby component of the Marine Corps Reserve are not required to attend drills or to perform active duty training.

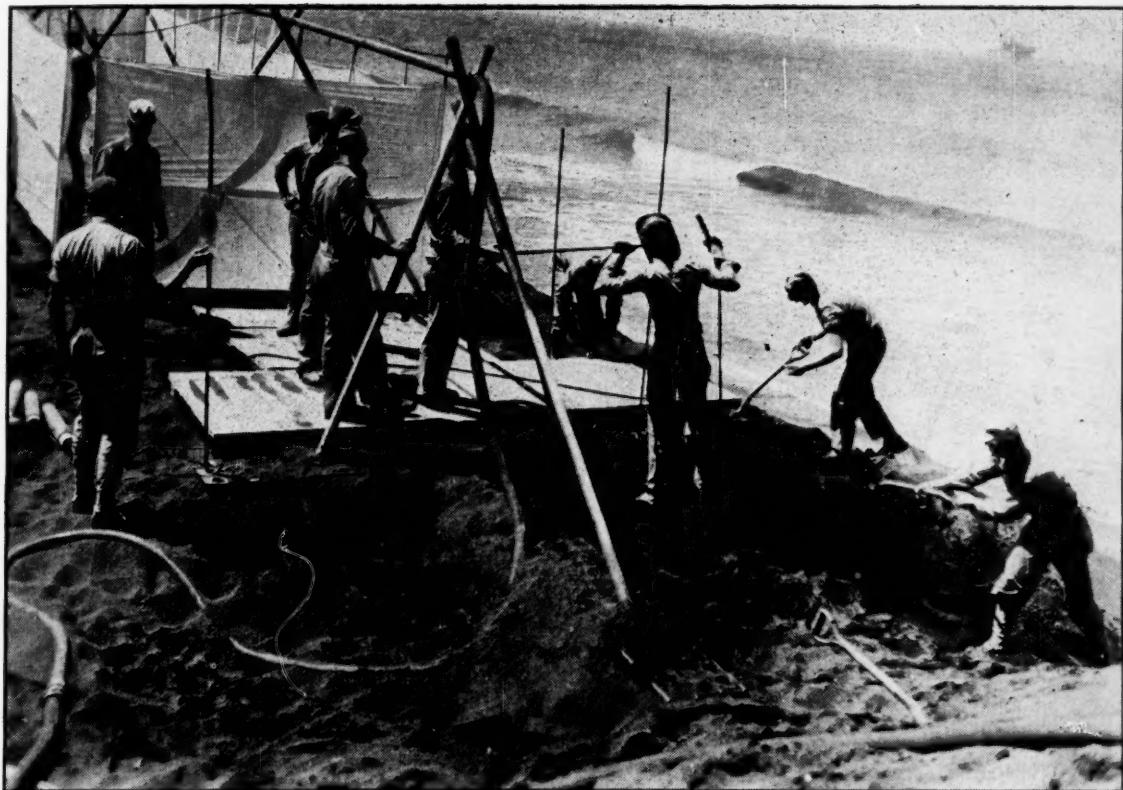
The standby component of the Marine Corps Reserve has been outlined for personnel who reside at a considerable distance from the nearest unit of the Organized Reserve or whose family and occupational interests preclude their meeting drill and training requirements. It is planned that officers and selected enlisted personnel of the standby component will, upon their own application, receive 15 days active training duty each year and be permitted to enroll in Marine Corps School correspondence courses.

In addition to retaining contact with the U. S. Marine Corps and increasing personal military knowledge, membership in the Marine Corps Reserve assures appointment to the enlisted rank held upon release of active duty; opportunities for advancement in rank; exemption from Selective Service under present laws, and the assurance of serving during war or national emergency with the branch of service already chosen. Membership in the Marine Corps Reserve on inactive duty in no way affects the rights and benefits to which an individual is entitled as a veteran.

Location of units of the Organized Reserve and other complete details are not available at the present time, Colonel Randolph M. Pate, director of the Marine Corps Reserve, explained, adding that as further information became available, it would be released.

END

Marine 1st Lt Albert J. Bibee has laid claim to a new endurance record for single engine military aircraft. He remained aloft for 17 hours 5 minutes and 25 seconds in his Corsair. According to officials at Lt Bibee's station in Yokosuka, Japan, the previous mark was 14 hours.



Marines, drilling for cool drinking water, found hot springs and harnessed them.

Crazy Quilt of Iwo

The small size and geological properties of Iwo Jima lent bizarre aspects to one of the most unusual battles the Marines fought in the Pacific.

By LtCol J. D. Hittle

IT IS a well recognized military truism that no two operations are exactly alike. Each clash of opposing arms, regardless of the size of the encounter, possesses certain individual characteristics giving that particular battle a unique quality.

When the histories of the recent war are written, the Battle of Iwo Jima will unquestionably stand out as the most unusual major battle of the vast Pacific campaign which in itself was a succession of strange operations. Most of the bizarre aspects of the struggle for that desolate "Gibraltar of the Pacific" resulted from the small size of the island and from its peculiar geological properties.

The density of troops on Iwo was probably the highest in recent military history. At the time that the Fifth Amphibious Corps was punching a hole into the defense of Motoyama Airfield No. 2, the marines occupied an area of roughly three and a half square miles. Approximately 60,000 men were compressed in that amazingly small piece of ground. Such a high ratio of troops to ground area resulted in a multitude of situations which

could hardly be described as "normal." Indeed, it was with good reason that one of the division staff officers, trying to figure out how he could accommodate a newly arrived Corps hospital within his division boundary observed, "available real estate on Iwo is non-existent."

On the east beach, a battalion of 105s was firing, almost continually, its guns squarely in the middle of a shore party area. Truck and tractor drivers merely glanced to see if the barrels were elevated sufficiently high to permit safe passage and then continued on their way.

Lack of desirable ground area often forced supply and ordnance officers to violate practically every rule for the location of ammunition dumps. The case of the Third Marine Division ammunition dump was a good example. By the time that the Third Division, in Corps reserve, came ashore on D plus 5, no desirable dump sites were available. After a hasty ground reconnaissance, the Third Division ordnance officer and the G-4 came to the unpleasant but unalterable conclusion that the only

place where the division ammunition dump could be located was on the east runway of Motoyama Airfield No. 1. Not only was such a spot devoid of any natural cover or concealment, but it also possessed the quite undesirable characteristic of being under direct Jap observation from the high ground to the north.

To place a Division camp in such a location was a calculated risk—with all the odds in favor of the Nips. But, the Division had to have an ammunition dump, and the risk was accepted. Just because the selected spot did not possess the natural requirements of cover and concealment was no reason why an attempt couldn't be made to provide artificially those two prime requisites. An element of concealment was furnished by spotting individual piles of ammunition among the numerous wrecked Jap planes that had been dragged to that part of the field. TD-18 bulldozers scooped out trenches into which the ammunition was placed, and the volcanic rock and sand was pushed into stubby piles at the end of the short trenches to form hasty revetments.

The Japs wisely held their fire until they figured that the dump was well stocked with ammunition. Then they opened up with artillery. Ordnance personnel suffered casualties, but not one round of ammunition was lost to enemy artillery fire. The protection afforded by the 'dozer-dug trenches and the loose revetments was adequate, and the scattered hulks of planes prevented the close and detailed observation necessary to disclose the location of individual stacks of ammunition.

Yes, textbook and school solutions say that am-

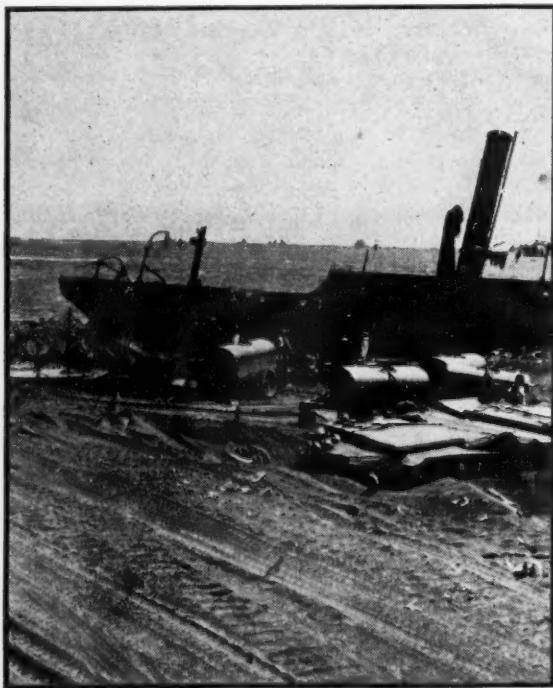
munition dumps should have cover and concealment. In this instance, the dump site originally had neither. But the ordnance personnel knew what the book said and tried to provide such characteristics artificially by using only a few destroyed Jap planes, a few bulldozers, and a lot of common sense. The efforts to follow the book paid big dividends.

All normal distances on Iwo were reduced. The initial CP of the Third Division was less than a thousand yards from the Jap lines. Regimental train bivouacs were located according to available ground rather than according to the usual forward echelonment of subordinate supply installations. One regimental train bivouac was 1,000 yards to the rear of the Division CP and another RTB was immediately adjacent to the Division CP. As the lines pushed deeper and deeper into Jap territory, Motoyama Airfield No. 2 went into commission with its long runway precariously close to the front lines. This resulted in the strange spectacle of giant B-29s landing and taking off forward of the CP of an assault regiment.

From the geological standpoint, the battle for Iwo was phenomenal. It is doubtful if ever before in the history of warfare had nature furnished such appropriate stage props for a battle. While subterranean heat permeated into the upper soil levels of most of the entire island, it was the sulphuric rock and sand on the high middle ground around Motoyama No. 2 that seemed to be most affected by the great earthen fires that were burning below the surface. Every foxhole, slit trench, and shell crater exposed the hot sub-soil to the moist sea air, with the result that on damp days, when the humidity was high, every scar in the rugged face of the ground gave up a slowly spiraling pillar of misty sulphur vapor that leveled off into a very low ceiling, almost as if nature was providing a shroud for the bloody struggle. The indistinct forms of advancing men, the ragged rocks, and the bare and desolate surface, devoid of all vegetation except for an occasional shell-shattered stubby tree, blended into the kind of macabre setting one might expect Dali to design for Dante's "Inferno" or the witch scene from "Macbeth."

There were no sources of fresh water on Iwo. Consequently, all water for the attacking troops had to be brought in from ships or distilled ashore from ocean water. In order to facilitate distribution of distilled water, one of the divisions established one water distillation point on the east coast and another on the west coast of the island. To prevent the surf-churned sand from being drawn into the distillation units, it was necessary to lay the intake line a considerable distance out from the beach. But it seemed that every time that a new line was put in, the pounding surf broke it loose from its anchor and carried the intake away.

On the east beach, there was an abandoned hulk



This Jap hull served as a distillation reservoir.

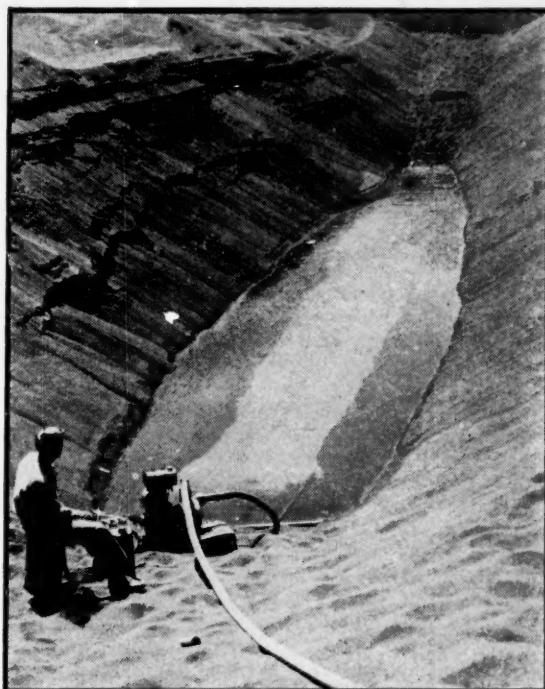
of a small Jap freighter which had been hit and grounded during the preliminary bombardment of the island. The ship was filled with many shell holes which allowed the steady flow of water into the hull. While the seas bashed against the ship, the water that flooded the hull was quiet, sand-free, and at a constant level. The harassed engineers, struggling to keep distillation units operating at maximum capacity, discovered the water-filled hull of the rusting Jap ship to be an ideal reservoir in supply the battle-tired troops with an adequate water supply.

The prevailing winds that fishtailed from a northerly direction kept both the east and west beaches subjected to periodic lashing from the surf. Consequently, the water distillation plant on the west coast was also confronted with an apparently insurmountable job of keeping an intake line secured in the quickly rising seas that would shift from gentle swells to booming breakers in a matter of a few hours. Unfortunately, for the water point engineers on the western beach, there was no wrecked Jap ship available for use as a reservoir.

Constant loss of the salt-water intake for the distilling machines on the west beach was endangering the division water production level. Lacking the heavy anchoring equipment required to secure the intake in a heavy surf, the engineers turned to another solution. A long-boomed shovel with drag-line attachment was delivered to the location of the water point, and in a short time it was digging a constantly deepening hole in the black sand and ash, only a few yards inland from the high water mark. By digging below the water table of the beach the engineers hoped to create an open well from which water could be drawn into the distillation units. Being close to the highwater mark, it was reasoned that the sea water would keep the hole at a constant level by seepage through the coarse sands.

Finally, the open well was completed. At the bottom of the steeply, sloping sides of soft black sand was a clear and deep pool of water, but the water in the bottom of the hole was not cool, salt water needed for the distillers. The shovel operators and the water point crew watched with amazement as a continuous wisp of steam rolled up from the pool. Iwo had played another prank on her conquerors. Instead of the water from the ocean seeping into the open well on the beach, the well was filled with mineral water heated by the smoldering fires of Suribachi, the ostensibly extinct volcano.

Hot mineral water was not suitable for distillation equipment, so once again the water point operators, more interested in the immediate problem of keeping up water production than in geological phenomena, went back to try again to lay a water intake line out into the clear water beyond the surf. Heavier equipment had arrived, and the new attempt was successful.



Wells gave plenty of hot water for showers.

The hot mineral water well at the bottom of the deep sandy hole was more than a curiosity to other of the Marine engineers. People paid good money for hot mineral baths in the States, and the sweat and dust covered marines could use a hot water bath. In a matter of hours, a Division bath point was in operation. Discarded sled pallets were laid side by side to form a floor. A steady stream of hot water poured through numerous holes bored in a large overhead pipe thereby providing enough showers for an entire platoon. There were shallow canvas tanks for those who preferred the more leisurely tub bath. The first to use the bath had but one complaint, a strange one indeed: the water was too hot! Tests showed that the water was coming out of the ground at 160 degrees F. To cool the water, a 3,000-gallon canvas tank was set up on a pile of sand above the level of the showers and the hot well water was pumped into the large canvas tank where it was partially cooled by the sea breezes before it flowed into the shower pipe.

From the military standpoint Iwo taught at least two significant lessons. It taught that with practical imagination and ingenuity even the seemingly useless objects like an abandoned ship hulk or a well of hot mineral water unfit for distillation could be turned to the advantage of combat troops. But, perhaps still more important, Iwo Jima firmly proved that even in such a crazy-quilt type of battle the principles of "the book" need only intelligent interpretation to be applicable to even the most unusual situations.

END



Wings Over Fujiyama

Marines of the "Hell's

Bells" Squadron, flying gull-winged Corsairs, drone over Japan's sleeping giant, Fujiyama. Based on Honshu Island, the patrol flies regular missions keeping a watch on Jap activities.

FMF Training Afloat

The most important function of a peacetime ship-board detachment should be the training in field subjects of sea-going Marines on equal footing with their shore-based comrades. By 1st Lt Dennis D. Nicholson

AS A former enlisted man serving a tour of sea duty, I became impressed with the training possibilities available to the commanding officers of ships' detachments. After being commissioned and while serving aboard the aircraft carrier *Monterey*, both as a detachment officer and a commanding officer of the Marine detachment, I had an opportunity to put into practice some of my earlier conceived ideas. The most important function of a ship's detachment is training. Since a larger percentage of our Corps is at sea during peacetime, sea-going training becomes more important than ever.

When a marine is transferred ashore after a normal tour of sea duty, he should be highly trained. He should know more about basic subjects than his shore-based component. However, this is not often the case. Many commanding officers of ships' detachments have overlooked the opportunities that exist for training their command.

Subjects that must be covered initially by ships' detachments, including military courtesy, interior guard duty, naval terminology, honors and ceremonies, etc., must be taught by the inevitable lecture method. To make this method most effective, we adopted the plan of mimeographing each lecture, illustrated with appropriate diagrams and sketches, and furnishing each man a copy. If a man were on watch when the lecture was given, he could keep up by studying his copy. Each man was issued an instruction folder in which he was required to keep a copy of every lecture. After the lecture presentation, and prior to class discussion, copies of the lecture were distributed. Then the discussion was conducted while each individual referred to his copy of the lecture.

These lectures were used as a basis for promotion examinations and the instruction folder proved to be an excellent study reference. When a man joined the organization, he was issued a folder containing all lectures that had been given. This gave the new man an opportunity to catch up with other members of the detachment.

In order to give the men a wider range of subjects than could be covered by lectures and to let them know what they were responsible for, we mimeographed a list of 38 subjects with study references and required the list to be kept in the instruction folder. The subjects were taken from Marine Corps Order 146, but the study references were changed to keep abreast of the latest Marine Corps Schools' training publications. Then we established a detachment training library containing all the references shown on our list. The library

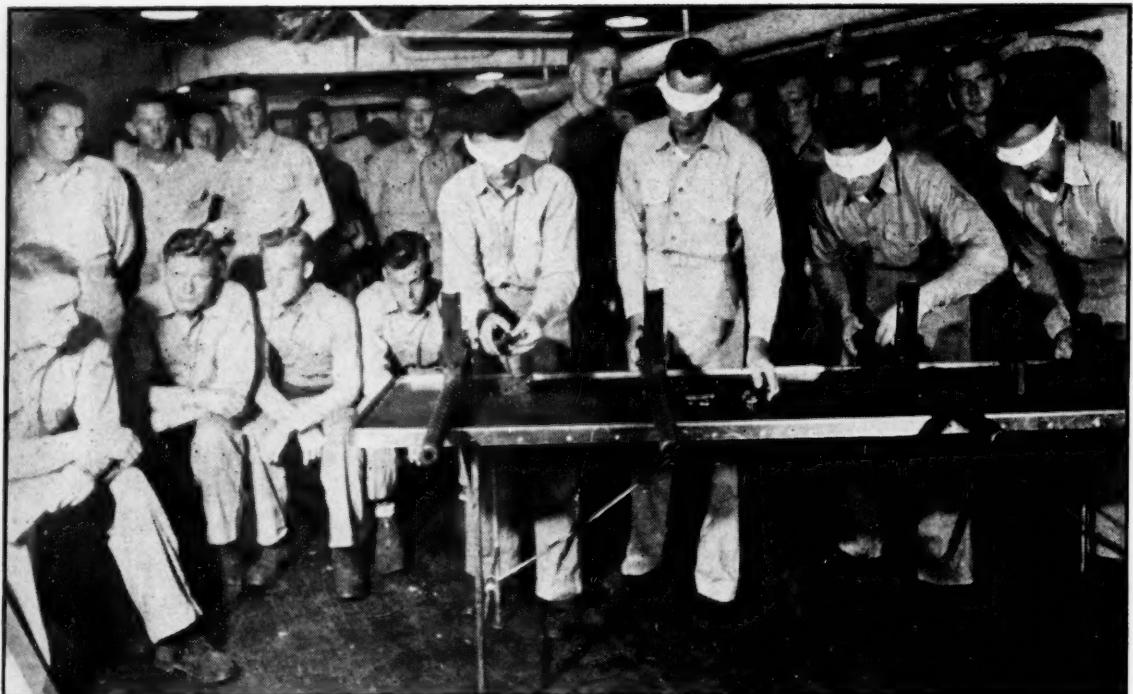
was easy to manage, since a man, by referring to his list of subjects, always knew the number of the publication he wanted.

It is often difficult, but rarely if ever impossible, to find a satisfactory place to hold school aboard ship. Aboard carriers the ideal schoolrooms are the pilot's ready rooms and these will often be available during peacetime. In the absence of ready rooms, messing compartments make good classrooms. During good weather, classes can be effectively conducted on the weather decks or in large gun sponsons. It was found that an improvised classroom could be had in the Marine compartment by providing portable legs for lower bunks and using the bunks as benches, after lowering them into position. If a large classroom was required, it could be made available by removing complete tiers of bunks from the compartment. Only a short time was required to remove or replace bunks.

Visual aids can be used to the same advantage aboard ship that they are in other organizations. We maintained a library of all visual aids applicable to shipboard instruction. Such a library should be maintained aboard ship in peacetime as long as the Post Quartermaster, Marine Barracks, Washington, D. C., is able to furnish them. However, even in peacetime, the Navy will not tolerate unnecessary wood aboard ship; so the standard wooden frame for visual aids cannot be used. To take care of this situation, our gunnery sergeant designed a collapsible light metal tripod supporting a crossbar that held the charts appropriately for instruction. This tripod and crossbar was also used to support our portable blackboard which, incidentally, was made of thin sheet metal.

Another useful classroom aid that will normally be found aboard every ship that carries a Marine detachment is the opaque projector (Balopticon). The projector is especially helpful in teaching organization and strength since the Marine Corps Schools' reproduction of tables of organization fits the standard projector and can be projected on a screen in its entirety. This is much more effective than attempting to have an entire class—even a small one—look on one copy of the T/O and it is an excellent means of teaching men to read the T/O efficiently.

Of course, one of the chief advantages of the opaque projector is that it so readily projects illustrations from field manuals and other illustrated training publications. It is often more effective to draw a small diagram and project it on a screen with the Balopticon than to sketch the same illus-



Blindfolded marines assemble and disassemble weapons to assure thorough knowledge.

tration on a blackboard. The projector can also be used to study small parts of weapons closely by placing the part on the tray provided and projecting its enlarged image on the screen.

A VALUABLE aid to training is the voice recorder. A recorder is carried aboard all carriers for the purpose of teaching pilots how to use their voice on radio circuits with best results and other ships carry them for instructing boatswain's mates in the use of a public-address system. They will record from one to 30 minutes, depending on the type machine; and they are excellent aids in teaching men to give commands.

There is little opportunity for a private to drill troops. Yet when he becomes a corporal, he is expected to be a seasoned DI. The recorder makes it possible to teach him without ever actually drilling troops. The student gives his command, or series of commands, into the microphone and then plays it back. The instructor points out errors and corrects them as the student hears his own commands being given.

Every capital ship in the Navy now has an anti-aircraft gunnery trainer aboard. This trainer is equipped with two 16mm moving picture projectors and a full-sized screen. In addition to its primary mission, the trainer can be used to show regular 16mm training film.

Each ship also carries a 16mm projector for training purposes and a film strip projector as well. In order to be able to utilize these facilities,

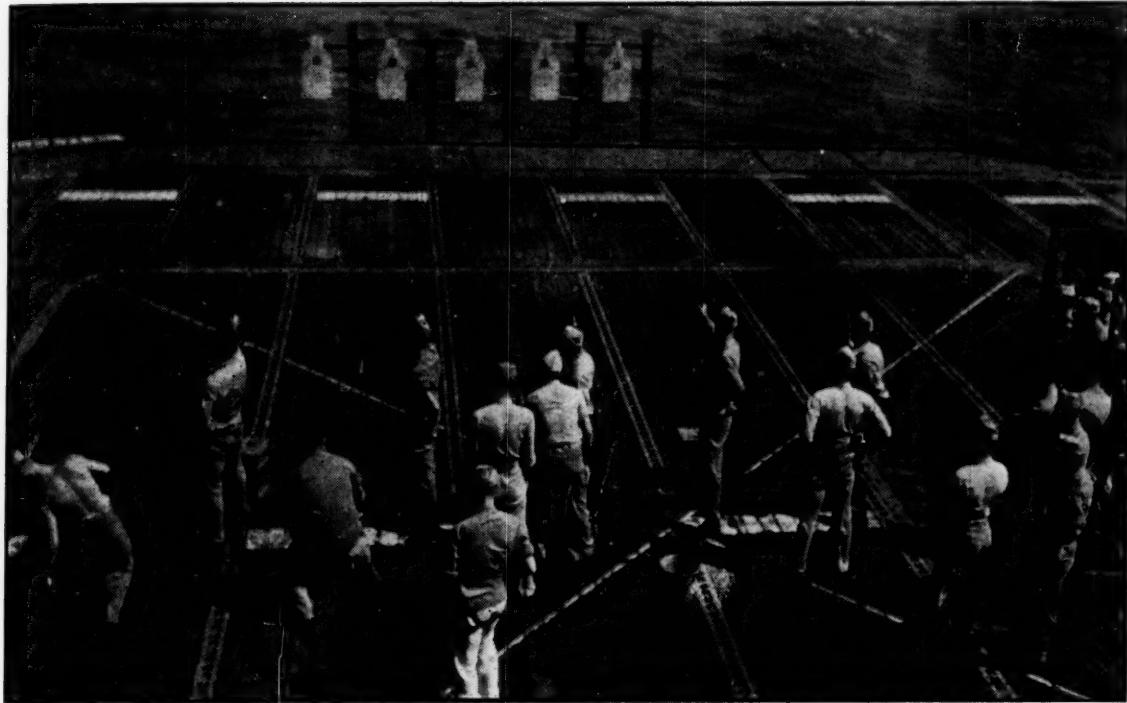
the *Monterey* detachment maintained a film library consisting of training film, general interest film, and film strips. We secured these aids by direct requisition, by borrowing from Marine Corps Training Aid Libraries, and by checking them out from Navy Special Devices branches on a "one-cruise" basis. These were our most valuable training aids and were especially helpful in teaching weapons, particularly the 40mm anti-aircraft machine gun.

The flight deck of a carrier is a great advantage to a training program. We used our deck for close and extended order drill; pistol, rifle, and machine gun firing; calisthenics, combat-conditioning, and even occasionally for an open-air classroom. Although the flight deck is an advantage, almost as much training can be conducted on the fantail of a cruiser or battleship.

For close order drill training we used the conventional system of short and frequent drill periods, allowing the corporals and sergeants to drill the guard as often as possible.

Practical instruction in extended order drill was difficult on the flight deck because of the hesitancy of men to "hit the deck" with the necessary *elan*. However, it was adequate for teaching extended order formations, intervals, and the proper methods of changing from one formation to another. Naturally, arm and hand signals were taught along with extended order drill.

SEMAPHORE was also treated as a part of this instruction and every man and officer was required to have a practical knowledge of this subject. The



A marine detachment holds target practice aboard ship, using the sea as a backstop.

men usually learned semaphore on their own time, but occasionally a Navy signalman was called on to instruct.

Instruction was continued in port and we made every effort to find and use target ranges in whatever area we found ourselves. In one instance when we were anchored at Espiritu Santo, we constructed our own pistol range, complete with bobbing targets. We kept a supply of EL targets in our store-room and used them on our flight deck pistol range. We used the pistol range for firing submachine guns too, and later our practice paid off in a high percentage of pistol experts and first-class sub-machine gunners, when we fired for record on a regulation range.

SINCE it was impractical to install rifle targets on board, we devised the scheme of getting rifle practice by firing at anti-aircraft target kites that we obtained from ComAirPac's Special Devices Section. This type of firing was popular with the men, especially in the case of firing the Browning automatic rifle.

Of course, there was the inevitable firing at cans tossed over the side. Our shipboard rifle practice was not sufficient to make marksmen; so we took the detachment ashore at every opportunity to fire the range. We found ranges of from five to 50 targets on almost every island where the Navy maintained an operational base. We practice-fired on many different ranges and occasionally fired the rifle, pistol, and submachinegun for record.

For training conducted on the flight deck, three

wrestling mats proved to be the most valuable aid. We procured these mats through the ship's athletic officer and they were used for numerous activities. When holding machine gun sight-setting exercises, we set the guns up in battery on these mats, using four model 1919A4 light machine guns that were obtained through the Gunnery Department aboard. We rigged a 1,000-inch target in the center of the flight deck for our use in conducting this training. We kept the target stowed in our detachment store-room when not in use.

Before undertaking sight-setting exercises, we taught machine gun nomenclature, stripping and assembling, and functioning. Our policy on weapons instruction was to have one of the officers give detailed school to noncommissioned officers in order to prepare them for instructing the non-rated men. Then we would use one of two systems for carrying out the instruction. One system was to divide the detachment into small groups with an NCO instructor to instruct each group. The other was to have only one instructor supervise the training, using the Marine Corps Schools' system of having each member of the class strip the weapon and name the parts, keeping pace with the instructor. The latter system was found to be more effective. Men were required to be able to disassemble and reassemble the basic weapons blindfolded.

WE used promotion examinations to stimulate interest in our instruction system. These examinations always consisted of a 50-question, written



A machine gun platoon conducts a drill on the flight deck of the carrier Monterey.

examination covering the list of subjects contained in the instruction folder, and a practical examination on close order drill, extended order drill, semaphore, 20 and 40mm antiaircraft machine guns, LMG, BAR, M1 rifle, pistol, carbine, and TSMG. In order to insure that our noncommissioned officers "kept up," we required them to take all the promotion examinations regardless of whether they were going up for promotion. This was our way of insuring that the NCOs always knew more than the privates.

WHEN no vacancies existed for promotion, we often gave examinations to check the progress of our instruction and kept the results on file for use in determining the best qualified men. We never "Shanghaied" a man from the organization, and transfers always came from the top of the examination standings. If a man wanted a transfer, he had to know what we considered enough to start him off in the FMF.

Only in instructing classes in field fortification were we able to use models. We found this a difficult subject to teach aboard ship. However, by using models, diagrams, and lectures, we gave our personnel a working knowledge of the subject. We constructed our own models to scale from materials aboard ship.

We kept the detachment in physical condition by regular combat conditioning on the flight deck. We were successful in securing an instructor for judo, tumbling, and bayonet from the West Coast school. He used the wrestling mats for all exercises where the students had to "hit the deck," and with their help, he managed to keep the organization in good combat condition.

When Marine Corps training bulletins or Army training circulars announced a new policy on training, we adopted it immediately, trying always to be ahead of other ships' detachments. For example, when the bulletin came out reorganizing the Marine Corps squad, we immediately began holding classes and problems using the new fire team organization. We organized the detachment into fire teams for all practical purposes, assigning working parties, gun watches, bunks, etc., by fire teams instead of individually.

To insure that our detachment was always ready to go ashore, or for any other job, we often had inspections with full equipment. Occasionally we would fall out fully equipped as a machine gun platoon; but usually we would fall out as a rifle platoon. When the sailors were standing inspection in dress blues, we would often be there with field marching packs and utility uniforms. On these occasions we would require men to have everything, including toilet paper in their helmets, and we checked continually for ways of improving the way our gear was stowed in the storeroom and armory; so that we could be more efficient in falling out on short notice. We felt well rewarded for our efforts when finally we were ordered to leave the ship and land on Japan with the initial occupation forces.

NO attempt has been made to list all the subjects covered, but something has been said about each major training aid an officer may expect to find at his disposal when he goes aboard ship that a great deal of training can be conducted, and better marines made while the detachment at the same time carries out its primary duties. END

A Basic School for Technicians

With new inventions and changes, the individual technician has gained added importance. In the future, he should be efficient and versatile in several fields. By Capt Arthur Rose

WHEN this officer joined the Marine Corps, he was told the rifle platoon leaders of World War I had been largely responsible for "winning the war." That was to say that a great deal of responsibility and success was determined by the decisions of these men. It was expected, the old hands said, that the rifle squad leaders of World War II would carry most of the responsibilities which had been placed on the platoon leaders in the previous war.

No doubt there was much truth to these statements, and, in addition, we have seen the rifle squad broken down into smaller groups and greater responsibilities placed on the leaders of these groups. With advancements in the methods of warfare, it may be that any future emergency will place heavy responsibilities on the individual, especially the technician.

The past few years have shown the importance of the technician, whose duties were to store, maintain, repair and operate the intricate equipment which was so necessary to our success. It was necessary for the Marine Corps to establish training centers, select men for training, and train them on a limited time schedule in order to supply the demands for technicians. Those responsible for this work are to be highly commended for their accomplishments.

With apparent changes and new inventions, several questions are arising as to the most efficient methods of training technicians. Will they be trained to be specialists in one field or will they, as the riflemen are trained in their field, be capable of performing more duties and be qualified to service a variety of materiel? Can we train a technician to be a specialist on one item and expect him to be capable of servicing an improved or different replacement item? Can the technicians be trained to service items issued by more than one arm of the Quartermaster Department?

If a man is trained to service one item or a small group of items, it is apparent that the best methods for training call for the memorization of the nomenclature of the various parts of the items, its malfunctions and corrections and its operational limitations. Such training will necessarily fail to give a thorough understanding of theory and principles of operation involved and the answers to the many questions characterized by the word "why."

Inasmuch as the items in current use are much more complex than those formerly used and the items to be used in the future will, no doubt, increase these complexities, it is apparent that

training by memorization will be more difficult and of limited success. For example, the ordnance repair man of a few years back was required to be capable of repairing the shoulder weapons then in use, machine guns and a few pieces of light artillery. The ordnance repair man of today must be able to repair items that embody internal combustion engines, electric motors, electric generating units, hydraulic systems, prime movers and complex gun carriages in addition to the old "stand by" weapons. Future qualifications for him and other technicians will lie within the ingenuity of our inventors and industry.

Can a man be trained to service a restricted group of items by present methods and be expected to transfer his mechanical abilities to an item that replaces the one for which he was trained to serve? If the new item closely resembles the old or is a modification of the one formerly used, this will be reasonably possible. If these factors are not present, additional training will be required to extend his abilities.

For example, let us take a technician who has received eight weeks of training on a fire control director embodying the principles of mechanical computation. Should this item be replaced by a director embodying electrical computation would the technician require an additional eight weeks' training before his abilities could be utilized in servicing the new item? Had the original training included a four weeks' training period on basic electricity and additional theory could the time required for the initial training have been reduced to six weeks, and the transfer of abilities toward servicing the new item have been accomplished with a two or three weeks' familiarization course?

A glance at the current T/O will bring to light another pertinent question. It will be noted that there are many similar items of issue used by the various arms. For example, let us take one item such as generators. These items are issued by ordnance, engineers, signal and to some extent by motor transport; all embody the same principles of operation and are similar in design.

Should technicians for such items be trained in separately maintained schools, and, in addition, should the items be repaired in separately maintained shops? Would it be more advisable to train such technicians under one consolidated training program and, if they are to serve a restricted group of items, require short familiarization courses covering such items.

In the past, required personnel for training has

been selected from the current available supply of technicians and from recruits on the basis of their mechanical aptitudes and civilian experience. Future sources for such personnel will be more limited to recruits with few qualifications other than secondary education. This will necessarily change the methods of selection for those to receive technical training. Time and funds cannot be wasted on those not best fitted for such training. Varied aptitude tests and the screening time afforded by a basic technicians' school should determine those to receive further technical training.

All prospective infantrymen receive the same basic training. From among them, men are then chosen to be trained as machine gunners, mortar men, BAR men, etc. Why not give all prospective technicians a basic course embodying basic technical subjects before they are assigned to advanced technical courses?

Such basic technical courses would need to be standardized both in subjects taught and examinations given. The individual's accomplishments in this training would determine his qualifications for advanced training.

It has been suggested that such a school be placed under one command such as the Com-

mandant, Marine Corps Schools, Quantico. A proposed schedule for such a school might include the following: 4 weeks—basic electricity; 4 weeks—use of hand tools and shop mathematics; 5 weeks—welding (including electric and gas welding, metallizing and basic metallurgy); 3 weeks—rigging and field engineering (including wire and cable splicing, studies of stresses, strains, leverage, etc.).

Should it be found advisable, such a schedule might be interspersed with daily classroom studies of survey courses of physics and chemistry. These studies might deal with the effects of heat and cold, theories of energy, heat, light, friction, lubricants, preservatives, actions of corrosive agents, etc.

It is believed that such a basic school would provide the Marine Corps with a better basis from which to train technicians. It should aid materially in producing better trained technicians and in the consolidation of similar duties. It would aid in classifying those with mechanical abilities who will be in the service only for a short time for further training in case of a national emergency or for future training with reserve units. The technician of the future can be made as efficient in his field as the infantryman is in his field.

END

Salute to the Hospital Corps

NINETY-SEVEN of every 100 men in the Navy and Marine Corps who were wounded in World War II survived. The adequate provision of whole blood, and the shock-preventing blood derivatives ranks high among the therapeutic factors resulting in such low mortality. But all the blood, and all the plasma, and all the albumin in the world would have been without value had not properly trained personnel been on the scene to administer it. They were.

Casualty evacuation, a joint operation with line personnel of ships and aircraft, rapidly and efficiently completed, contributed largely to the survival of our wounded, who soon after injury could expect to be safely transported by water or air to a rear base hospital, where medical personnel were ready and waiting to care for them. Air evacuation, most dramatic of all transportation, was pioneered on a large scale by Navy medical officers and hospital corpsmen attached to the Marine Corps air arm, in the early campaigns of the war in the South Pacific, when the situation was the darkest. That fatalities were so few is to the credit of those hardy plane crew-men who came through when the going was toughest.

The base and fleet hospitals, transported from a drawing board and a storeroom in the United States

to a South Pacific jungle, mushroomed up and provided the therapeutic and pleasant atmosphere so necessary for the man under treatment and his convalescence. And then the long established continental hospitals and the newly created special hospitals in the United States, where the men could be returned for plastic repair, prothesis, and rehabilitation—all have played their part in eventual return to duty or discharge to civilian life of a previously unheard of percentage of war wounded, able and fit to perform most, if not all, of the objectives of living.

Overshadowing all has been the team work of individuals and groups of individuals of the medical department in providing the best to be had for these who needed the best. And without discounting one bit the accomplishments of the doctors and the nurses and the specialists, it can be said to the everlasting credit of the Hospital Corps that the maximum of the accomplishment of the medical department's mission was due to them.

No accomplishment of the medical department would have been possible without them, for in every activity—research, combat, laboratory, or ward duties—they were always ready and willing to perform their necessary duties and frequently just a little more.—*Hospital Corps Quarterly*. ★

Our Future DIs

Drill instructors exert a strong influence over

the career of a marine at his most critical period. Therefore they should be the best non-commissioned officers, selected on a Corps-wide basis. *By LtCol R. D. Heinl, Jr.*

IFF RECRUIT training is considered the most important period in a marine's career, the men who make it so are the drill instructors. Ask any veteran of Parris Island or San Diego. He may not tell you that the great Pacific battles were won on the drill field, but ask him the question: "What single person exerted the greatest influence on your Marine Corps career?" Nine times out of ten, the answer will be, "My drill instructor."

The Marine Corps will never be any better than its recruit depot DIs. To these men is entrusted the responsibility not only of imparting the mechanics of soldiering to recruits, but far more important, the duty of making marines. This they accomplish in many ways: by precept, by appearance, by example, sometimes by main force. They are the keepers of tradition, literally the architects of the Corps. "The Marines have a way," wrote a youngster who fell on Saipan, "of making you much more afraid of failing to do your job well than of being killed." His drill instructor, I imagine, would have been worth knowing.

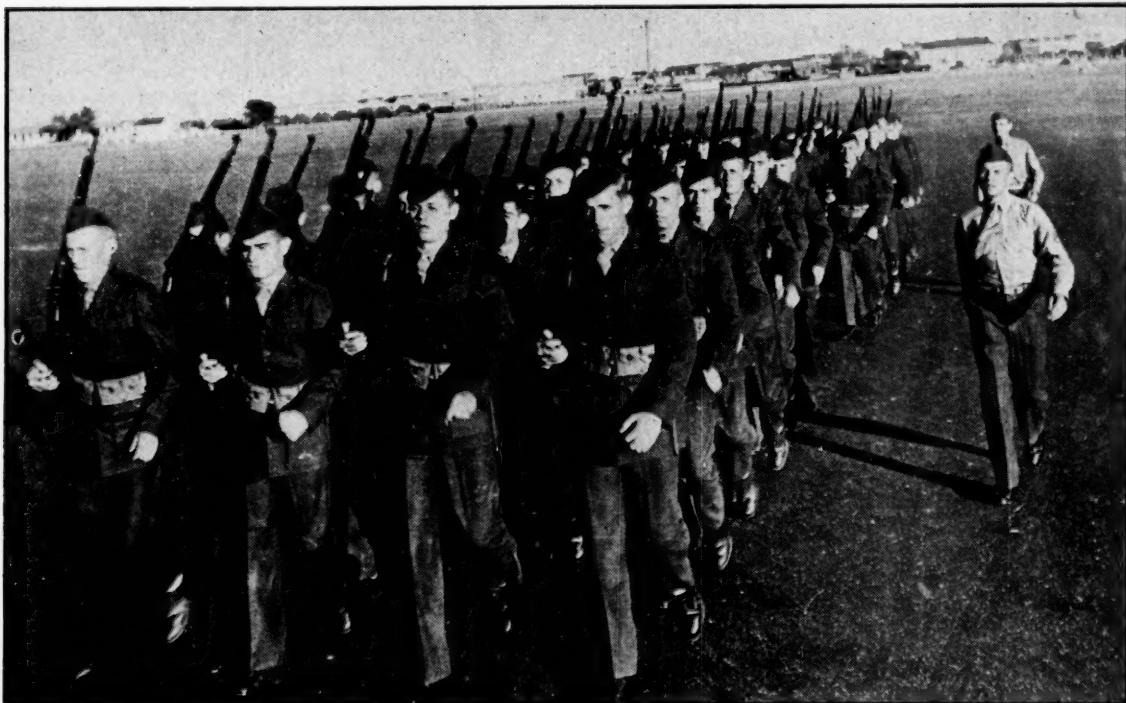
What I am getting at is this: if boot camp is beyond argument the critical time of a marine's career, and if equally beyond argument it is the

recruit drill instructors who by example and force of character make it so—then one of the most important steps toward maintaining a really outstanding Corps of marines would be to narrow the choice of drill instructors to the very cream and elite of all our noncommissioned officers, selected on a Corps-wide basis.

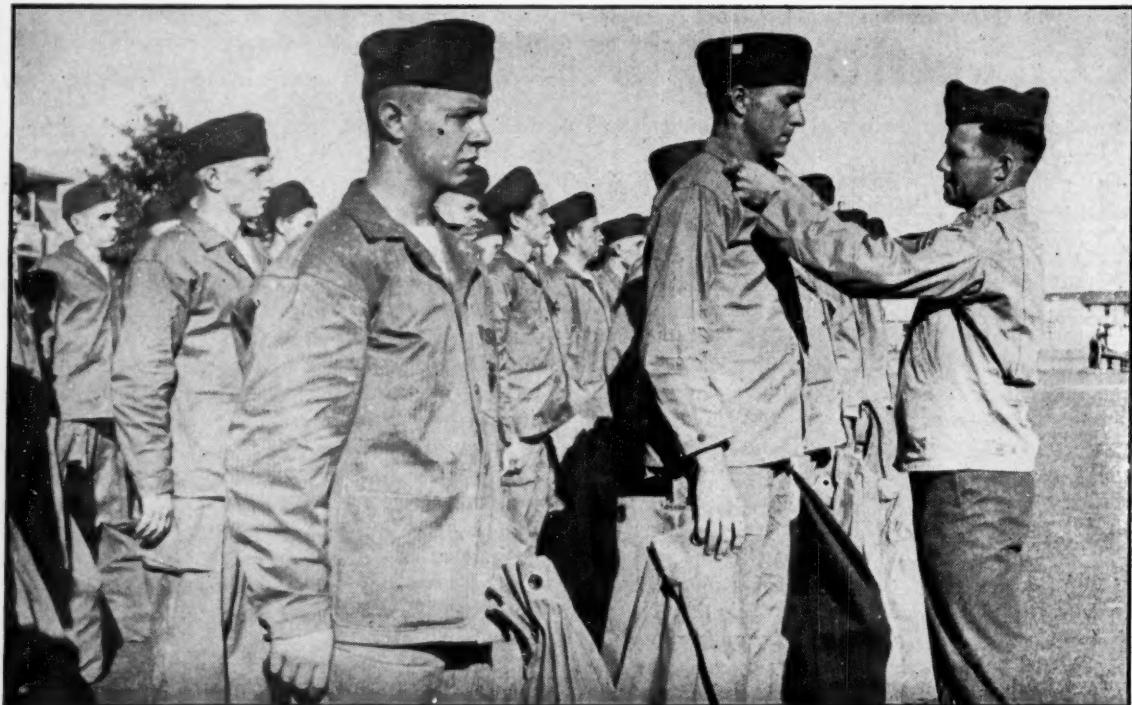
In a nutshell, it is proposed that Marine Corps Headquarters establish uniform standards designed to secure outstanding NCOs for duty as recruit drill instructors; that these men serve only for a designated tour; that upon successful completion of the tour they be given immediate promotion; and that they then be sent to the Fleet Marine Force for duty.

The advantages of the foregoing proposition are several in number. Above all, it would insure that during recruit training, the marine's most impressionable, formative period, he would be led and taught by the best NCOs of the Corps. Second only to this consideration would be its effect upon the general caliber of noncommissioned officers. Being a drill instructor is a course in leadership.

If a steady flow of basically above-average NCOs were given the opportunities and responsibilities of



Drill instructors, like those above, guide boots during first days in the Marine Corps.



Drill instructor gives a recruit a lesson on proper wearing of newly-acquired clothes.

this duty, coupled with a reward for compliance with its high standards, the Corps would in effect have a school for NCOs, the graduates of which would continually infuse troop units with vigorous junior leaders trained to command, to understand men, and to look and act like marines.

Initial selection of men for drill instructor duty should be by Marine Corps Headquarters, which might establish an eligibility list, similar to an NCO promotion roster, based on the following minimum standards:

(1) Candidates should be of noncommissioned rank not higher than sergeant, with at least six years' service, four years of which must have been at sea or in the Fleet Marine Force, to include in either case (for the next few years) combat experience.

(2) A general classification test rating not below Class III, no offenses during current enlistment, and generally above-average markings, should be required.

(3) Personal attributes of the potential DI should of course be carefully screened at the recruit depot upon reporting. No matter how wisely the standards have been set up, long-range selection of men for duty with such exacting personal and temperamental requirements will inevitably fail unless it is supplemented by on-the-scene scrutiny, tests and interviews.

During his tour at the recruit depot, which should not exceed 18 months, in order to prevent his going stale—the DI should be continually observed and

coached. His results should be recorded. If it is evident that an instructor is consistently turning out recruits below general levels, he should immediately be "washed out," needless to say without the promotion which will award the men who come through with successful records.

The proposition for automatic one-rank promotion of all drill instructors who have served a full tour in good standing requires special justification. It has a three-fold purpose. First, when peacetime promotion slows back to normal, this opportunity will beckon outstanding men as the shortest route to advancement and will thus assure the recruit depots of willing, extra-hard working DIs, each one of whom will have that added output found only in men "striking for a rating." Second, it will serve as a tangible reward to compensate for the really exacting nature of the drill instructor's work. Finally, by automatically advancing successful DIs, a uniform all-Marine Corps standard for NCO performance is in effect set and continually maintained.

The final operation which rounds off the whole cycle is that the graduate drill instructor be immediately returned to troop duty, preferably with the Fleet Marine Force. Newly-promoted, full of energy and experience, self-confident as only a year and a half on the drill field can make a man, he should have attained maximum proficiency in the individual art of being an NCO; and if the Marine Corps wants better non-commissioned officers, this is one way to get them. **END**

Postwar Recruiting

The problem of recruiting the Ma-

rine Corps' proposed peacetime 100,000 men is given additional importance due to the rapid demobilization processes which have been instituted. By Capt Frederick T. Finucane

AS THE Marine Corps' demobilization program continues at an uninterrupted pace, additional prominence is being given to the recruiting service. To this small group of marines, located in almost every large city in the country, falls the task of obtaining the young men who are to make up the 100,000 men of the proposed postwar Marine Corps.

From the beginning of the demobilization point system, the Marine Corps has managed to keep the number of points necessary for discharge approximately ten points under that of the Army. At the same time, we have our commitments to maintain divisions in China and Japan, as well as men on garrison in the United States and on warships at sea. The number of enlistments obtained from the draft dwindled to only about 600 in October and November of 1945, and, beginning in December, we ceased to take men except on a volunteer basis.

After V-J day, extensive plans were laid in all districts for an intensive campaign to secure recruits and those plans are now bearing fruit. New substations in smaller cities were opened in many states. To supplement these, itinerant recruiting parties, traveling by train or station wagon, are now touring the smaller towns and surrounding areas to give full coverage to the whole United States.

When point releases were first inaugurated, there seemed to be a rush by all marines to get back to the States and become civilians. These men and officers were quickly absorbed into jobs. But, towards the end of the year, as desirable employment and housing became harder to obtain and the terms of enlistment grew more attractive, many men decided to reenlist and officers endeavored to gain regular commissions. This trend was slow at first but is increasing each month. Currently, men can reenlist retaining their former ranks provided they apply within 90 days of their discharge date.

In December, policy was altered to allow men to sign up or ship over for two years. Now a man can enlist for a tour of two, three, or four years. It might be expected that many applicants would elect to avoid the draft by signing up for the minimum period. This has not been the case. In the Jacksonville, Florida, district more than half of the first enlistments have signed for either three or four years, indicating that most of these men are at least giving serious thought to making the Marine Corps their careers. The same is true of the enlistees who have the additional attraction now of being able to choose practically any station

Figures released by the Division of Recruiting reveal that 17,165 men enlisted in the Marine Corps between 1 September 1945 and 28 January 1946. Of this number, 12,045 were regulars and 5,120 were inductees. As allotment of draftees to the Marine Corps was stopped in December, all enlistees from now on will be regulars. Recruiting figures by the month were: September, inductees, 4,032, volunteers, 1,954; October, inductees, 533, volunteers, 2,037; November, inductees, 539, volunteers, 2,043; December, inductees, 16, volunteers, 1,989; January (up to January 28), volunteers, 4,022. These figures show that almost as many men volunteered for enlistment in January, the first month of recruiting since the draft of Marine Corps personnel was lifted, as were inducted through Selective Service in September. The Division of Recruiting also reported that the Corps had 59,813 regulars as of December 31, 1945.

in the United States for their first duty station.

Naturally, not everyone who wants to join the Marines can do so. The same high physical standards still exist. This has been the reason for many rejections, but the cause of much of our strength. Especially in the Southern states where the general health level is low, physical rejections are numerous. Florida has a draft disqualification average of 54 per cent, which is also the approximate average for those who volunteer there. Another limiting factor affecting many young men is that married applicants cannot be accepted except on reenlistment within 90 days of discharge, and then the men must have held rank in the first five pay grades. In general, those applying for enlistment are 21 or younger and the vast majority of them are junior imprints of those old timers who have brought the Corps to its present esteem and reputation.

The organizations of the recruiting service is not only simple but the chain of command is short. The majority of its personnel have seen extensive combat duty, with 75 per cent of them wearers of the Purple Heart. They are carefully selected with emphasis placed on their ability to make friends in their assigned community. They know that they have a definite selling job to do and "only those qualified and trained to do that selling" are used.

Recruiting is under the Personnel Department of the Marine Corps with the Division of Recruiting

To those who have already ordered the "Guide Book for Marines"

THANKS—

for your advance orders for "Guidebook for Marines" as well as your understanding and cooperation in bearing with us until your copy is delivered.

Circumstances over which we have no control have unavoidably delayed delivery and we sincerely appreciate your patience.

The Gazette

as the parent echelon. Below this are the six recruiting divisions, with headquarters in Philadelphia, Atlanta, Chicago, St. Louis, Dallas, and San Francisco. Divisions are directed by a colonel assisted by a staff of clerical and publicity personnel and are composed of various districts, generally one or more to a state.

It is the district that does the individual contact work in obtaining men. Each one has an officer and about a dozen men to staff the substations in the various cities of the district, perform clerical duties, secure local publicity and radio time, and do the actual recruiting. The officer-in-charge of the division makes frequent announced or surprise inspections and maintains continuity and standards in over-all policy. When applicants are procured, they are sent to district headquarters where they receive a physical examination, an enlistment contract, and a service record book. They are then sent immediately to either Parris Island or San Diego for basic training.

Recruiters are the first group in the Marine Corps to return to the use of blues as uniform of the day. Since early January, that familiar figure of prewar days, the immaculate marine recruiting sergeant in his dress blues, is once again a prominent figure in the towns and cities that he visits.

The recruiting service is endeavoring to promote good will and secure applicants for the Marine Corps almost every day in the year. The competition, especially from the Army's \$3,150,000 advertising campaign, is strong.

Col W. S. Fellers, head of the Division of Recruiting, has summed up the Marine Corps' policy in a letter to all hands which states, ". . . the Marine Corps must continue to muster a maximum force capable of taking their places in combat. . . . It is the belief of the Commandant, however, that the Marines are sufficiently well known, and have so often carried out particularly tough assignments, that the American people (men and boys of enlistment age) will continue to want and insist upon the Marines."

Current enlistment statistics seem to bear this out. In spite of the postwar letdown in the desire to enlist, the Marine Corps has raised its enlistment figures from approximately 1,800 in the entire month of September to approximately 2,000 in the first fifteen days of January. The initial task of the recruiters is to raise our number of regulars from 68,000 to 100,000. Our second task is to keep it at this figure.

Based on statistics for a 14-year period, 21 per cent of all marines failed to ship over at the expiration of their enlistments. Thus the mission of the recruiting service is to provide, by voluntary methods, a minimum of 21,000 men per year (entire strength of the Marine Corps in 1936-37) in order that a peacetime strength of 100,000 enlisted men can be maintained. The need for a maximum effort thus becomes apparent.

END

Storming Fortified Beaches

Decentralized

control is not a distinguishing feature of an amphibious assault. Personal reconnaissance and use of supporting fire are more vital.

By LtCol Robert E. Cushman, Jr.

OUR field manuals explain that the battalion is the basic tactical unit of infantry. Furthermore, it is the smallest tactical unit which has liaison with all three of the supporting arms, air, naval gunfire, and artillery and can thus control their combined fires. For these reasons, it is logical to take the battalion as representative of all higher units in any discussion of the technique of assault on a fortified position and its special application in an amphibious operation. Even though portions of the air and naval gunfire support are from the fire plans of higher commanders, the ultimate controlling agency is the battalion. Companies, platoons, and squads carry on their attack within the broad framework of the fire support plan controlled by the battalion and within the scheme of maneuver of the battalion.

The plans for any attack fall logically into two categories: the *plan of fires* and the *plan of maneuver*. Each of these, plans in an attack on a fortified position, must be particularly complete and contain exactness of detail. In an amphibious operation, the supporting weapons available vary with the progress of the assault, and the scheme of maneuver for a battalion is extremely restricted in most cases. An amphibious operation involving an assault on a fortified position includes techniques that are more specialized than those normally used in land warfare. Both will be examined, with emphasis on the former.

THE first problem confronting the battalion is that personal reconnaissance cannot be made prior to the landing as a general rule. Knowledge of the objective must be based, therefore, on an exhaustive study of available G-2 summaries, aerial photos and situation maps. This study will indicate that an assault on a fortified position may be necessary; it will show the more important targets; it will form the basis for an estimate of the situation in the battalion zone of action; and it will provide the facts from which a scheme of maneuver may be constructed.

This scheme of maneuver should be based upon an analysis of the targets in the zone of action and the mission assigned to the battalion by regiment. Companies are assigned objectives which are designed to penetrate the enemy's weakest point. The final decision as to what constitutes the weakest point is based on a study of enemy installations, terrain, and their influence on his plan of defensive fires. Thus it is made clear again that the scheme of maneuver of a battalion in a landing is limited.

The battalion must move by water directly to and over a designated beach. In most cases, it must move inland and seek to throw its main weight against a weakness deduced from photographs. Flanking movements by companies will be rare for these elements must clear the beach promptly, invariably necessitating a movement straight inland by all units for a considerable distance, usually as far as the division's first objective.

THE second problem to be solved is the utilization of supporting fires. In the early stages of a landing operation, artillery will be lacking as well as the direct fire weapons of tanks and self-propelled artillery. Air and naval gunfire will be present in great strength, however. It must be noted, though, that the fire plan for these two weapons are made by the naval attack force acting upon the request submitted by the landing force and that this plan is designed to further the mission of the entire landing force as a whole. This means that the air and naval gunfire plan of the battalion is almost entirely one of opportunity—fires of opportunity after the battalion lands and targets present themselves. Direct fire weapons, bazookas and anti-tank grenades, are limited to those organic within the battalion. Although their use cannot be planned in detail, this contingency is met by decentralization of weapons to subordinate units for the landing.

The newest techniques, however, do provide direct fire for targets in the immediate vicinity of the beach by two methods. One is that of placing fire support ships in the boat lanes and controlling their fire, or that of other ships, from an amphibian tractor-borne control party; the second is the use of armored amphibian tractors as direct fire weapons from hull defilade positions in rear of a control line restricting them to a zone near the beach.

In summary, the battalion fire plan in the landing is characterized by the following factors: (1) Artillery, tanks, and self-propelled weapons are not available. (2) Air and naval gunfire are available in great strength but preparatory fires by these weapons are designed to further the main effort of the landing force as a whole, not the main effort of a particular battalion. Nevertheless, great reliance must be placed in these two arms. (3) Organic weapons, which will assist a battalion in assaulting a fortified position, must be decentralized for the landing. (4) The fires of all weapons must be rapidly laid on targets of opportunity rather than fired on a schedule or plan.

No scheme of maneuver is possible unless the units involved can be controlled; no fire plan, particularly one dependent upon targets of opportunity, can be adequate unless communications between the gun and a spotter or forward observer can be maintained and the fires thus controlled. In the early days of amphibious operations, this meant that fire support was inadequate to push an attack and that command had to be relegated to squads for hours after a landing because of faulty communications.

Although communications can fail or be knocked out, improved equipment and methods of waterproofing have lessened this danger. As a consequence, control of units can be maintained by battalions during the entire water-borne movement to the beach. Likewise, control of naval gunfire has been established on the way to the beach and maintained throughout, while air strikes have been controlled within 30 minutes of landing.

These facts are brought out to make it clear that decentralized control is not the vital factor it once was in a landing. Except for a very short time in isolated instances where undestroyed enemy fortifications are met at the water's edge, decentralized control is not nearly as distinguishing a feature of amphibious assault as compared to normal assault on a fortified position.

Methods of Attack

First and foremost in this consideration is that reconnaissance is made personally by the battalion commander to accurately determine the strong and weak points in the enemy defensive position, avenues of approach into the enemy position, suitable objectives, and suitable positions for supporting weapons. He can vary the directions of attack of his companies to suit the terrain; in short, he can prepare a scheme of maneuver.

Contrast this with the preparation of the plan of maneuver for assaulting a fortified beach and it is evident that this latter has inherent disadvantages. These disadvantages can only be overcome by prior training of small units in rapid reconnaissance, aggressive maneuvering, and assault tactics so that the battalion can move forward through the schemes of maneuver of its small elements, thus making up for the incompleteness of its own scheme of maneuver.

Likewise, in his fire plan for a normal attack, a battalion commander can prepare a very detailed schedule of fires against definite targets. He can very intelligently and definitely further his main effort with these fires. He has available direct fire weapons which are particularly destructive and valuable in attacking a fortified position. Since these fires are his to plan and control, and since he has reconnoitered and located specific targets, the battalion commander is not forced to rely upon targets of opportunity to provide his fire plan. Targets of opportunity now become simply the

final bits of information which fills in the plan to completeness as the assault progresses. Close-in assault weapons such as bazookas, flame throwers, and demolitions can also be concentrated and their control centralized. This permits them to be used to further the main effort.

Just as in any assault, the battalion commander influences the action in an amphibious assault of a fortified beach, by the use of his reserves and by shifting his supporting fires. It is evident that in assaulting a fortified beach the commander's influence is less than normal. He has fewer supporting weapons at his disposal to shift and his maneuver room is greatly restricted because his reserve is restricted to the battalion boat lane while water-borne and because his beachhead will be small until considerable progress inland has been made.

From this examination of the assault of a fortified beach by a battalion, it is possible to deduce certain precepts and principles, namely:

1. The technique of assaulting a fortified position is not fundamentally changed by reason of an amphibious character; it is only modified.

2. These modifications are in the nature of restrictions—restricted fire power particularly in direct fire weapons, and a restricted scheme of maneuver due to lack of on the ground personal reconnaissance and planning and a lack of maneuver room for the reserve—therefore, the task of assaulting a fortified position from the water is more difficult than on land.

3. These difficulties are overcome by intensive training of small units and by aggressive assault on their part. It is further compensated for by a decentralization of available organic weapons so that these small units can make an aggressive assault.

4. The technique used by smaller units does not change either in an amphibious assault, as will be shown in more detail later, but is merely modified and made more difficult. These smaller units still have indirect supporting fire in the form of naval gunfire instead of artillery; they have direct fire in the form of bazookas instead of tanks.

5. Finally, it is believed to be a fundamental principle that the basic unit to be trained and taught to reduce a pillbox should be the squad. The success of the battalion is dependent upon squad action, particularly in an amphibious assault on a fortified position.

Having discussed the battalion so fully, it will be necessary only to touch briefly upon the techniques of the company. This is because its function in an assault on a fortified position parallels that of the battalion. The battalion provides a framework of fires and maneuver, and within this framework the company constructs its own plans of fire and maneuver. The company, with its mortars, its machine guns, and its bazookas, implements the larger fire plan of the battalion. Its problems are exactly the same as the battalion's problems but on a smaller

scale, hence the points drawn from that discussion need not be repeated.

In examining the technique of the squad and the platoon, there are several reasons why we lump these two units together and separate them from the company and battalion. First, below the company we find that there are no organic supporting weapons; only basic armament of the squad and nothing more. Second, and most important, it is the squad, or combination of squads which actually comes to grips with the enemy. It is the squad or platoon which must organize an assault group and a support group to carry out the technique of assault on a pillbox. The platoon or the squad, in most cases the latter, is the unit which destroys the pillbox.

The one notable characteristic of the squad and platoon is that they have no supporting weapons. This very fact is characteristic of amphibious operations, proving again that the squad or platoon (which is essentially a combination of three squads) is the basic unit in pillbox warfare, particularly in an amphibious operation.

THE squad has certain special techniques which it must learn before it can take part in an amphibious assault on a fortified beach. First, it must become proficient in reducing a bunker by its own efforts. Second, it must learn to use the technique for assaulting a pillbox as shown in "The Marine Ribe Squad in Combat—MSC-3-26." It must be able to divide into an assault group and a support group. It must be able to cover its activities by small-arms fire, by smoke, by flame and by the high explosive of the anti-tank grenade. It must be able to breach the pillbox by demolitions under cover of these supporting fires. Third, the squad must be able to incorporate this technique into the technique of assaulting a pillbox when support from the battalion assault platoon is available to assist it. This must not differ in important fundamentals from the assault of the squad by itself. Fourth, it must also be able to integrate its method of assault into that used when supporting weapons are available, whether naval gunfire, artillery, tanks or self-propelled guns.

In accordance with the tactical principles for taking a pillbox, the squad is divided into an assault group and a support group. Usually one fire team makes the assault and the other two form the support. Now by the inherent nature of their mission each of the two groups will have certain weapons to accomplish that mission. Thus the assault group will have a certain amount of small-arms fire for close-in support, but must rely mainly upon smoke to conceal its actions, flame in the form of incendiary grenades to blind the pillbox and cover their close approach, demolitions to breach the pillbox, and grenades and bayonets to assault it.

The support group will have small-arms fire with

emphasis on automatic weapons in order to drive all supporting enemy inside the pillbox and to pin them inside; it will have weapons which deliver high explosive against the target for shocking effect, to further pin down the enemy inside the pillbox, to isolate the pillbox from others which may be supporting it, and to cover the approach of the assault group to close range. It is admittedly highly inadvisable for a squad to assault a pillbox without any other support than what it carries with it, nevertheless, as pointed out, it may, and often has, become necessary; it is possible and can be done, therefore it must be taught.

Practice and training having made the squad proficient in the above tactical operation, it becomes simple to integrate this system with any available supporting weapons or units. The weapons of other units are classified to aid the support group or to aid the assault group. They are then worked into their proper relation with the appropriate group of the squad or vice versa. In this way, when squads from the assault platoon of the battalion are present they join with the assault group and their flame throwers and demolitions form the nucleus of that group. When rocket launchers from company headquarters or the assault platoon are present, they join the support group and deliver high explosives against the objective. Finally, when tanks and direct fire assault guns are attached, they also become part of the support group and add their fire to that of the bazookas and the anti-tank grenadiers. In a similar way, the new recoilless rifles, if adopted by the Corps, can be employed.

One final point remains to be covered on the technique of the squad. It has been pointed out that the efficacy of the battalion supporting fires in an amphibian operation is primarily dependent upon the prompt spotting of targets of opportunity and the placing of these fires on those targets. Similarly, that maneuver is primarily restricted to squads and platoons, and that reconnaissance in detail cannot be made except by these small units as they hit the beach and proceed inland.

IT is, therefore, necessary that squad and platoon leaders have the highest qualities of leadership; they must be aggressive, they must make rapid and thorough reconnaissance, they must make rapid and sound decisions and press the issue, taking advantage instantly of any weak spot revealed in the enemy position, and they must be prompt in spotting targets of opportunity and requesting and making the maximum use of supporting fires. The assault of a fortified beach tests the qualities and leadership of junior leaders as does no other military task, and success or failure of entire battalions and regiments may sometimes rest on the shoulders of one squad or platoon leader who is confronted by a pillbox in his zone of action which is sweeping several beaches with fire. END

Aerodromes in Mid-Ocean

BRITISH scientists have found a way of increasing the natural surface tension of water, making it technically possible to build a mid-Atlantic aerodrome or a floating cross-channel bridge.

This latest discovery in engineering-on-water began when an inventor's brain-wave sent him motorcycling at 50 mph along a tarpaulin stretched over a river ford. The new discovery has been sponsored and developed by the Royal Navy, and brings dramatic dreams within the realms of actuality.

Ordinary tension will support a needle on the water's surface. By putting a flexible synthetic surface on the sea, and by increasing the tension about 400,000 times, it has been found possible to support heavy lorries and aircraft in mid-ocean.

One practical result of the discovery is the production of man-made "islands"—composed of hundreds of hexagonal buoyancy cans—"islands" which can be built to any shape or length required, and which can be easily dismantled, transported and reassembled.

Another, which has already stood up to the severe practical tests of war, is the "Swiss Roll," a floating pier that can be rolled up, carried on board ship and later rolled out again from ship to shore.

This pier is nearly twenty times as light as a Bailey bridge of equal length, yet will carry a nine-ton truck.

Inventor of these new devices is R. M. Hamilton of London, who served at the beginning of the war as a petty officer in the Royal Naval Patrol Service. He is an inventor by profession. Cooperating on the involved mathematical calculations required was Mr. J. S. Herbert, housemaster at Eton College.

"Further developments from the original discovery are being made," Hamilton said, "but for the time being their nature must remain secret."

It was in 1941 that Hamilton was turning over in his mind the general problem of floating airports—when he had his "brain-wave."

"I realized the simple truth that if you could increase the natural tension of water you could support weights," Hamilton said.

That was where Hamilton's motorcycle came in. He borrowed a length of farm paling and some tarpaulin from a local farmer at Farnham, Surrey, where he was then staying. He bridged a local

ford with them and crossed on his motorcycle.

As he crossed, the inventor found, as he had expected, that he was being supported on the surface of the water. He also found that as he went at speed he was, so to speak, making a harder surface.

That was the beginning, but it was not until 1944 that the first practical result was employed—the "Swiss Roll" pier, used in the Normandy invasion.

In "Swiss Roll"—a flexible canvas-and-wood jetty—a tension of 18 to 30 tons is applied to any length stretching from ship to beach and the result is that a laden truck can be driven ashore in safety over the sea.

Some 2,700 feet of "Swiss Roll" were in continual use at the Mulberry invasion harbor at Avranches in spite of the appalling weather conditions encountered there.

The Royal Navy's latest experiments, only recently concluded, have been with a further development of the same fundamental principle, the "Lily" floating airstrip.

Given its name because of its resemblance to a carpet of lily leaves on a pond, "Lily" is a very different proposition to "Swiss Roll." It consists of numbers of buoyancy cans with hexagonal surfaces, so linked together that they "give" in a controlled manner to the motion of the sea from any direction, yet remain sufficiently rigid to take the weight of a heavy aircraft.

Whereas in "Swiss Roll" tension is applied externally, "Lily's" hexagonal surfaces, when linked together, create their own tension.

The Royal Navy's experimental airstrip is the smallest on which practical tests could be undertaken, 520 feet long and 60 feet across. On this an aircraft, laden to 9,000 pounds, has been landed and has taken off again.

A strip of this size can be assembled by 40 men in one hour. At present the cans are only six feet across and 30 inches deep, but their size could be scaled up to take greatly increased weight.

The whole surface of "Lily" is flexible so that it will not break up, but this flexibility is controlled by the use of under-water dampers. The inventor claims that, with the latest type dampers, more than three tons pressure is required to move the surface at all and that "Lily" will remain afloat in waves up to 36 feet from crest to crest.

The dream of Atlantic aerodromes has hitherto been unattainable because it has not been possible to build large enough storm-proof flat-surface structures. Modern transport aircraft would need a carrier or a strip twice the length of the *Queen Elizabeth*, largest ship in the world. Such a floating structure has hitherto been impractical.

The Navy's new seadrome can be transported in ships and assembled anywhere. With the present size buoyancy can, a "Lily" 2500 feet long could be transported in three merchant ships.—*British Information Service*.

Ambush in China

(Continued from page 16)

badly those tasty things we had been used to at home (or "Shangri-la" as we called it) such as sugar, milk and cigarettes. Our only sugar consisted of a deep-brown, rough substance which closely resembled shellac in taste and smell. Milk was non-existent, and for cigarettes we smoked anything we could get our hands on, mostly vile tasting, locally made Chinese brands with flowery names such as "Red Horse," "Red Bridge" and "Precious Idea." There were also some captured Jap cigarettes and a few, good, old American ones which were rare indeed.

As time went on, I began to see our situation in better perspective. In this area called the "pocket," it was the rule of the pistol and the sword. Civil law and order existed on the surface only. A Chinese possessing a weapon and ammunition was in a position decidedly superior to the others, and when several such persons grouped together they could make their power felt in many ways.

Chao, our guerrilla commander, had taken advantage of this situation. While this group had ambushed Jap columns and trucks, their main purpose had been to capture arms and increase their power among the civilians in the community. By this time, Chao was now fairly well installed as a petty war lord, ruling by the ancient maxim that "Might is right." Weapons, not manpower, were the problem. Every Chinese civilian wanted to join our ranks so that he could be on the side which shared in the take.

Our first ambush fitted in with Chao's ideas and worked out rather well. In late February, we

selected 300 of the best men for a night ambush on a Jap truck convoy to be coupled with demolition of a 75-foot wooden bridge. We picked a point on the main road where there was a hairpin turn, about one-half a mile from the bridge, and carefully scouted the area to find only a few Japs guarding the bridge.

After we started out on our 10-mile march to the ambush point, we ran smack into a Jap column and had our first healthy skirmish, which resulted in about 10 lost on both sides. We retired, returned two nights later, under ideal conditions—a beautiful moonlight night. After we had set all our men in position, we were rewarded with a 40-truck Jap convoy, which slowly labored over the road. We bazooked the third truck, then gave them everything we had. It was a pitched battle and I was disappointed at our men's inability to hold fire as they had been trained.

The results were good, however. We destroyed 14 trucks, killed about 45 Japs, captured 30 rifles, six officers' dispatch cases filled with secret papers, and a great mass of other miscellaneous equipment! The wooden bridge was destroyed, but in six days a Jap labor group rebuilt it out of beams taken from houses of a nearby town.

A month of activity had followed. From a hill near Nanyo, I was able to spot a large Jap truck dispersal area in which about 300 trucks were hidden. I arranged by radio a rendezvous with our air base at Chihkiang. Two days later seven B-25s appeared. We laid out our panels, so they could spot us, gave them an azimuth with estimated distance from our position and then talked them in on the target by means of our air-ground mike while "Chee-chee" ground away on the hand gen-



Young Chinese seize every opportunity to learn the use of our modern equipment.

erator. It was a great thrill to talk with our own bombers, and an even greater thrill to have ring-side seats when they bombed the dispersal area and destroyed about 40 trucks.

After two more fairly successful ambushes, Chao began to back down on me. Now that we were strong and had a fairly adequate supply of arms, he was no longer interested in wasting equipment on killing Japs and blowing up bridges. He was content to be the war lord of the area. Every artifice and every excuse was used to stall off each ambush I would plan. I could no longer restrain myself. We began to have words.

Finally, I took 300 of the best men and went out alone with them to carry out another ambush. We took several prisoners and on the way back located an excellent drop zone for reception of supplies to be parachuted to us.

I returned to our hideout to find the cupboard bare. Little Chao, in my absence, had moved off with his troops, lock, stock and barrel, taking every available bit of equipment! For two days, I chased him with my 300 men. Finally I caught up with him and we had a showdown which I shall never forget. After four hours of arguing back and forth, I settled with him for the return of most of the equipment and 500 men. Henceforth, I would operate separately in the northern part of the "pocket" while he operated in the south. When it came to selecting Chinese officers it was a satisfaction to see that the best of them wanted to come with me. We parted by the road, and that was the last I ever saw of the guerrilla chief, Chao SzLing.

These were some of the events which had taken place—some of the things I thought about as we waited in our ambush position by the roadside on that cold afternoon in late March, 1945. Now, for

the first time, I was completely on my own. The responsibility for the success or failure of this ambush now rested solely on my own shoulders, and on the success of this first ambush might depend the future confidence of my own men. I had undertaken the job in spite of the protests of Foo SzLing, my able Chinese senior officer who felt that a daylight ambush on the main road was too risky—in fact, so risky that it had never been tried before.

We had been crouching in the cold now for over an hour, but nothing except the two Jap trucks had passed. Foo SzLing and some of the junior Chinese officers were growing restless. The men were cold, and showed it. Foo SzLing spoke to me: "Captain, I advise we turn back. About two miles down the road there is a Jap garrison. If they know we are here, they may already be circling around in back of us by some of the other trails, and be ready to cut us off."

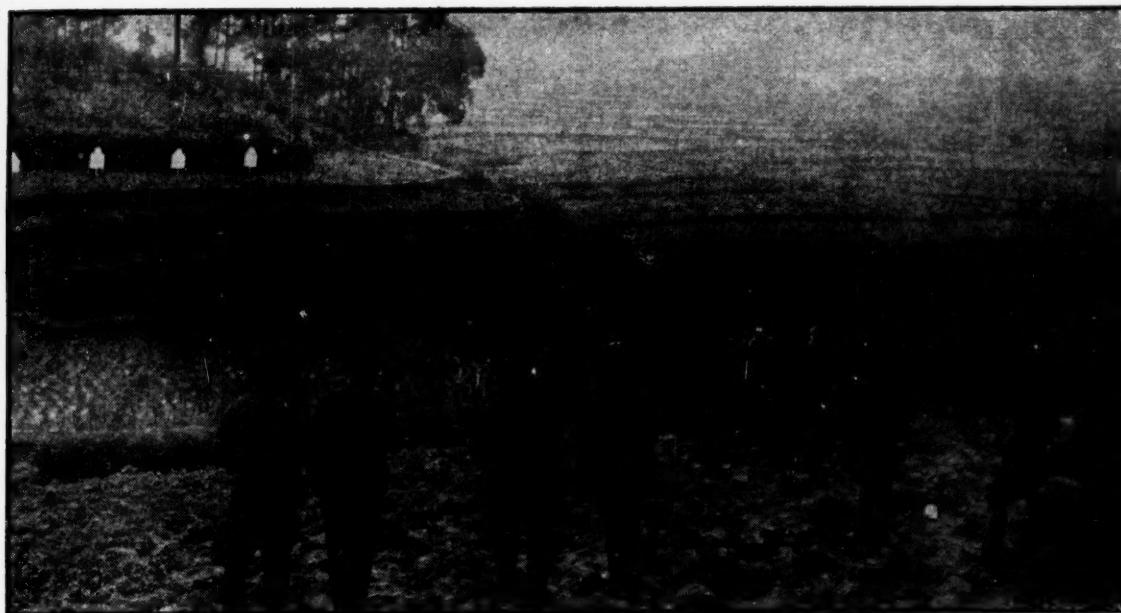
I replied: "Let's wait another 15 minutes, Foo." Cold as I was, I hated to give up after all the trouble we had gone through to get there.

I decided to take one more look down the road through my binoculars. About a mile or so away, a small stretch of the road was visible before it disappeared again into the hills. My glasses passed over it and just as I was moving on I thought I saw something moving in the road. Quickly I swung the glasses back and could hardly believe my eyes. There, moving down the road toward us, was a group of men marching! They were still too far away in the distance for me to distinguish how many.

I handed the glasses to Foo and told him that we must now change our plans for a truck ambush and get ready to lay a personnel ambush. We had



Enroute to an ambush, these guerrillas take a brief rest by the side of a road.



Target practice was an important step in the process of molding guerrilla troops.

about 15 minutes in which to get ready. Our men must be moved down close to the road before the Nips rounded the last bend and swung into full view. We would let them march right on down toward us till they got about 200 feet away from a little finger of a hill which extended down to the road. Then we would hit with all we had.

We frantically changed the machine gun posts so that we would get a good enfilade fire on the proposed ambush spot. I became exasperated when Foo SzLing refused to order 50 men down to the crest of the little finger hill extending over the road because he felt it was too dangerous a position. It was only after Chee-chee, Owens, Poland and I started down for the position that he released 50 men to join us.

Now the Japs had rounded the bend and were coming down the straight stretch, about 600 yards away! For the first time I got a good look at them and was amazed. It was an almost unbelievable sight! About 100 Japs were marching four abreast in perfect formation, with no point, guard or flank —just as if they were putting on a show for Emperor Hirohito himself! Spaced behind them at 20-yard intervals were three 75mm horse-drawn guns, and three caissons. All the men were equipped, however, with rifles or light machine guns.

Meanwhile, we all waited tensely under cover, as they gradually drew nearer and nearer. Now they had passed through a little cut in the road about half way down to us. Our men began to sight down their rifles. Through my glasses, I could see an officer at the head of the group, his Samurai sword swinging by his side. Now, they were crossing the little road bridge about 150

yards away. In the pit of my stomach arose that same peculiar feeling which never failed to materialize just before the first shot is fired in an ambush. Foo SzLing tugged my shoulder and whispered "Chenzai, Chenzai!" (Now, now!) indicating he wanted to give the signal. "Meyo, meyo!" (No, no!) we answered. I wanted to wait until they were almost on top of us because I knew what poor shots the Chinese were.

Now I could see their faces very clearly and hear them singing—about 100 yards away—then 90—80—I raised my left arm for the signal, at the same time leveling my Tommy gun sight on the middle of the group. The whistle blew. All hell broke loose, with machine gun and small-arms fire concentrated on the group.

On the first burst we dropped about 10 men. (A group of 50 well-trained marines would certainly have knocked off at least 25 or 30, but I had learned what to expect from the Chinese.)

This was a well-trained Nip company. As we opened fire, they dashed almost simultaneously for the ditch on the other side of the road, and were out of sight. Soon all six horses dragging the heavy guns and caissons were toppled over, and were no longer any live turrets to shoot at.

The live Japs were now hiding in the ditch and waiting us out. This was smart tactics on their part. Though there was nothing to fire at, our men continued literally to pour automatic fire in the general direction of the ditch. I will never be able to understand what happens to a Chinese soldier, once firing has started. No matter how many engagements he has been in, or how much experience he has, he seems to go hog-wild on automatic fire and acts like a rookie all over again. No amount of

training seems capable of changing that. Once again I became furious as I watched them wasting precious lead, hitting nothing, and disregarding our signal to cease fire.

There was only one effective way to clean out the Japs in the ditch before reinforcements arrived, and that was to get a couple of machine guns across to a house on the other side of the road, where they would have almost unobstructed fire down the ditch. I rushed two squads over. We lost three men in getting them there, but soon they paid dividends as they opened up on the ditch and knocked off another 30 or 40 Japs in a few minutes. By carefully watching for someone to move up out of the ditch, I was able to score two hits, and saw one of my targets splash back into the rice paddy.

Meanwhile, my men were getting completely out of hand. I had given the order that no bazookas were to be used because there was no target. Just then I heard a "Whoompf" followed a few seconds later by an explosion and saw a cascade rise from one of the rice paddies. Then another, and still another. Soon I got the story. One of the bazooka crew, in typical Chinese style, became excited and decided he had to get in on this. No sooner had he fired his bazooka than the other bazooka teams, thinking the order had been given to fire bazookas, opened up! This was typical of the problems we ran into every day with the Chinese.

Another example. In the midst of the firing, I noticed one of the machine gunners training his gun at what appeared to be an off-angle. I crawled up in back of him to find him aiming his Bren gun very seriously at a water buffalo down in one of the paddies, and splashing bullets all around it! Due to his poor eyesight he had mistaken the water buffalo for a Jap!

There probably were not more than 20 Japs left now out of the original 100, and most of these were huddled under the little bridge for cover. They popped out a hat on the end of a bayonet, the signal for surrender. I ordered "Cease fire!" blown, but could not quiet all our troops. Finally, realizing that time was passing (it was now almost 25 minutes since we had opened fire) and that Jap reinforcements might be brought up, I ordered the group nearest the road to scramble down to the ditch, and try to clean out the remaining Jap pocket with hand grenades. About 30 men got down into the ditch.

Soon we had grandstand seats to a running hand grenade battle between our men in one ditch and the Japs in the other. Here again I saw a touch

of Chinese psychology which is almost unfathomable. In the midst of this last ditch fight, with bullets still whistling and grenades bursting, four or five of our men, attracted by the prospective loot, scrambled up onto the road and started stripping Jap bodies!

In a few minutes, the coast was clear for everyone to go down onto the road. The few remaining Japs either got away or were wiped out.

A ghastly sight awaited me—bodies lying all over the water-filled rice paddies and ditch on the other side of the road. Quickly the men went to work and spiked the gun barrels and breeches with hand grenades.

A few minutes later, a barrage of small knee-mortar fire suddenly descended on us. Nip reinforcements had arrived and were bracketing us! We quickly scrambled off the road and up the hill toward our escape route, leaving two machine gun posts to cover us.

Within two hours, we had returned to a safe point in the hills, about four miles from the road. We knew that the Japs probably would not chase us this far but just in case they tried, we rigged up a few booby-traps and set out a few ambush patrols at critical points.

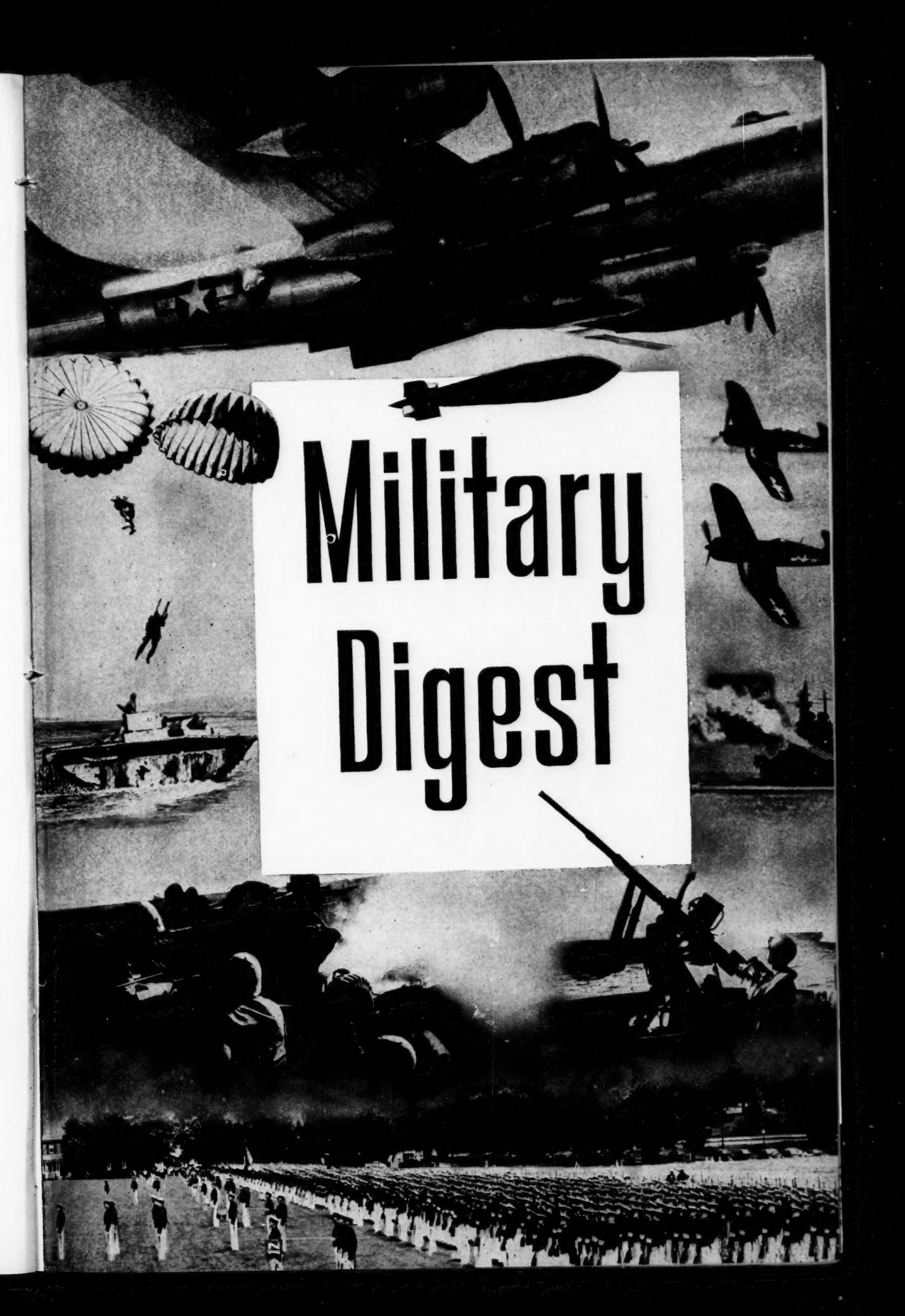
It was a successful ambush, for a Chinese one. We had killed about 80 Japs, captured over 50 rifles, several machine guns and miscellaneous equipment (including one captain's Samurai sword, which I appropriated) and had taken two prisoners. We had lost seven men and had four more wounded.

By ordinary standards of guerrilla warfare, however, these Chinese were a pretty poor lot. I could not help contrasting them with Serbian guerrillas, with whom I had fought in 1943 and 1944. In Serbia there had been a strong sense of patriotism and duty which permeated all and gave rise to a fervent *esprit de corps*. Here in China, individual bravery was the exception rather than the rule.

The Chinese, as contrasted to the Serbs, were poor soldiers who could not seem to learn how to handle their weapons or themselves properly in a fight. This was due in part to the diseased condition of the men (trachoma and scabies were highly prevalent) who survived in spite of an almost unbelievably meager ration. There was something about the Chinese temperament in battle which seemed to me to make them poor soldiers. They became excitable and would never control their fire. They aimed and fire badly. Fifty marines could have easily done a better job than the 300 Chinese guerrillas with us on this ambush.

END

The Navy has developed an exclusively jet-propelled fighter for carrier operations. Designated as the FD-1, Phantom, its top speed is in excess of 500 miles per hour and its service ceiling is well in excess of seven miles. Despite its high speed, it has a carried landing gait.



Military Digest

Jack Of All Missions

by **LtCol M. M. Nohrden, USMC**

THE Landing Vehicle Tracked, as it is officially marked, is singular in its ability to debark the infantry or high priority cargo not necessarily on the water's edge or beach proper but anywhere that the tactical situation demands—roads, bridges, streams, and swamps notwithstanding.

This rather odd craft, propelled both afloat and ashore by a tank track fitted with small paddles or grousers, has eliminated the laborious and usually dangerous work of unloading cargo at the water's edge as is the case with landing boats. It has obviated the requirement of piers, transfer of cargo to trucks, availability of roads and bridges; and has ignored the obstacles of slope and swamp.

The LVT, like most naval craft employed in amphibious warfare of World War II, was born of necessity. Oddly enough, however, this unique craft was born of the mother of Mercy rather than the father Mars. In the middle 30s, after several especially disastrous hurricanes in South Florida, it was recognized that many lives could have been saved from the impenetrable reaches of the Everglades region if there were in existence some machine capable of negotiating the swamps. Into this breach stepped Donald Roebling who began experiments in his own shop on such a vehicle. Constructed of all aluminum in order to keep weight to a minimum and hence reduce the pounds per square inch ground pressure, the craft "floated" over vast swamplands but also kept up a reasonable speed of some 10 knots in water.

TWO of these first models were turned over to the naval air stations at Opa Locka (Miami), Fla., and Corpus Christi, Texas, the third was retained by Mr. Roebling for local rescue use. The first two have served with an astounding record of rescues of not only hundreds of pilots downed in the otherwise unapproachable badlands of these naval air training areas, but of the very planes themselves. To conquer these morasses, the amphibian tractors of that date (circa 1941), were equipped with first-aid devices, two-way radio, salvage mechanisms, and every variety of personnel and material saving device possible to install. They were kept in a ready condition at all times mounted on fast trailer beds drawn by powerful prime movers. At the call of distress, this auxiliary unit would haul the "Alligator" as far as possible in its approach to the downed pilot and plane and debark it on its amphibious mission.

In 1940, the Marine Corps recognized the possible value of such a craft as ideally suitable to the generic naval-military concepts of that organization.

Upon approaching Mr. Roebling with the prospect of employing this invention as a machine of war, the Marine Corps met with initial objection but obtained rights to the machine and turned it over to the Bureau of Ships for development.

The first tests of the Alligator were effected by the Fleet Marine Force on winter maneuvers in 1940, on the island of Culebra, Puerto Rico, and later at Virginia Beach, Va. The results were so gratifying that the Marine Corps immediately began study of certain design and engineering changes which would adapt the craft to military use. A contract was let to the Food Machinery Corporation at Dunedin, Fla., very near to Mr. Roebling's Clearwater establishment, for the manufacture of the first few amphibian tractors.

Without the men to operate them, the Alligators would be just so much steel and fiber, so the Marine Corps, in May 1941, established the Amphibian Tractor Detachment at Dunedin, Fla., for the technical and operational training of the men who were soon to compose the nucleus of the many amphibian tractor battalions, and soon to ride roughshod over the coral reefs of the Pacific to the utter amazement of the boat-minded Japanese. Trainees arrived from the Army, Navy, Marine Corps, and even the Royal Netherlands Marines. So great was the press of training that another such establishment was initiated at the boat basin of Camp Pendleton, Calif., under the aegis of the Marine Corps and Navy.

From this time on, the growth of the LVTs was a phenomenon quantitatively, qualitatively, and tactically. Contracts were let on huge scales to the Food Machinery Corporation which soon found itself so overtaxed that it was necessary to employ three entire plants for this production, at such scattered locales as Lakeland, Fla., and Riverside and San Jose, Calif.

Demands for output were so great that it soon became necessary to contract to such concerns as St. Louis Car and Foundry, Graham-Paige, and the Borg-Warner Division of General Motors. These, in turn, further subcontracted to small producers for prefabricated parts or assemblies to a point where the basic producers were operating assembly lines. In 1944, LVTs had been turned out to a total well up in the five digit bracket.

The development of these craft was very interesting in that any person involved started nearly from scratch. There were no official "experts," little research data, and practically no "know how." Problems of water cavitation and resistance, r.p.m.

U. S. Studies Guided Missiles

THE First Experimental Guided Missiles Group has been activated by the AAF, under the command of Col Harvey T. Alness, former commander of the Seventh Bomb Group in India.

The present organization table of this group calls for a headquarters squadron, an air-to-ground squadron and a service squadron and provisions have been made to include ground-to-air and ground-to-ground squadrons at a later date.

The group will be charged with developing tactical and combat uses of guided missiles. The six objectives to be attained by the group are: Development of techniques and tactics, testing, development of training requirements and standards, training of individuals, development of personnel and organizational re-

quirements and demonstrations of the guided missiles.

Although the only guided missiles used by Americans are of the air-to-ground types, extensive plans have been made for the development of other original types, including ground-to-air and ground-to-ground.

As yet the only guided missile used in combat is the "Azon" bomb, guided by radio signals from the plane from which it was dropped. Other guided missiles are the "Razon" bomb, controllable in both azimuth and range, the "Felix," a bomb attracted to heat, and the "Roc," a standard 1,000 pound bomb equipped with television to scan the target and relay vital information back to the aircraft. There are several other guided missile projects which are, as yet, only in blue-print form.—*Army-Navy Journal.* ★

vs. speed on land and water, and the usual mass of technical data necessary for effective construction were items to be evolved and developed to the peak of efficient combinations by a constant compromise with weight, dimensions, and ground pressure limits imposed by tactical and combat shipping requirements.

No less important establishments than the Cadet-rock Model Basin and the California University of Technology enlisted their best brains in the solution of this design problem. Research, development, and test units were established at the Engineering Experimental Station at Annapolis, the Amphibian Tractor Detachment at Dunedin, and the Joint Army-Navy Experimental Test unit at the Amphibious Mental and Testing Board Training Base, Fort Pierce, Fla., while specially established testing grounds were set up at Camp Pendleton, Calif., by the Marine Corps.

Various discoveries, inventions, improvements, and ideas began pouring in at a rate as astounding as the characteristics of the data. A captured Japanese tank with jettisonable pontoons produced some ideas; a "mud buggy" invented for a large oil company in prospecting for oil deposits in the swamps of Louisiana added more information, while various "hams" and trained scientists contributed the rest, all working at a fever heat to turn out a service-designed combat craft to replace the reliable but vulnerable Alligator.

The basic concept of the Marine Corps for the use of these vehicles was a carrier for "hot cargo" over reefs and navigational hazards, in order to

render an immediate initial resupply to the first assault waves prior to the time that piers or floating pontoon causeways could be established for handling small boat cargo.

After the first such tactical use of the LVTs at Guadalcanal, it was perceived that the employment of these craft as carriers of the assault troops against coral-fringed islands was not only the sole efficacious means of such transportation available but also a ruse which made it mandatory for the enemy to defend every foot of beach front of his defensive territory, since it could not be accurately estimated that an attack would necessarily approach through the normal boat channels. The effect of this was the spreading of these defenses to a dangerously thin depth.

After depositing these assault waves of infantry at such locations on the target as directed, the LVTs normal mission included a series of return round trips with more supporting troops which were usually transferred from small boats at the "transfer line," well in toward the shore from the transport area. This device saved unnecessarily long water runs for the relatively slow amphibian tractors while water-borne (about 5 to 6 knots).

After the establishment of front lines of attack inland, the amph-tracs reverted to their originally conceived role of transporting the "hot cargo" to the troops that they had landed. When subsequently the larger amphibious craft such as LSTs, etc., were able to beach, the LVTs then took up the mission of hauling cargo directly to the front lines to which roads and bridges had normally been ren-

dered useless to wheeled traffic, or did not exist at all.

Since the LVT was a "craft," and would float, it was a naval responsibility and was put under the Bureau of Ships for control of production, development, tests, and distribution to the various using arms of both this country and various other of the United Nations. The first production models went to the Marine Corps, the pioneers of the craft, for use at Guadalcanal. Distribution to this arm was given priority for some time till the Army recognized the fact that since they would have to train amphibious assault units tantamount to the Marine Corps for landings, such a craft would be necessary both in the European and Pacific Theaters of Operations. The Navy used many of the LVTs as did the Army Air Corps, for air rescue missions, as aforementioned.

The personnel for the hastily organized LVT units were originally drafted from groups of men with specification serial numbers which might have some basic value in relation to the particular technical work required. Motor transport, tank, engineer, and communication personnel were the most adaptable to this program. As the courses of training progressed, however, fresh untrained men were put through these schools' courses, all selected on a criterion, quite high, based on their General Classification and Mechanical Aptitude tests ratings.

A word about the "Armored Amphibian Tractors," popularly but erroneously referred to as

"Amphibian Tanks." These vehicles, always designated as "LVT(A)," followed by the modification or model number, were heavily armed but not as heavily armored as tanks. The first type as above indicated was equipped with a 37mm gun, later gyroscopically controlled; .50 and .30 machine guns mounted in various ways; some for anti-aircraft work perched atop an open turret, some behind splinter shields and some on a ball and socket swivel operated from within the craft proper.

S.O.P. employed these craft in the very first assault wave to "hit the beach" ahead of the regular LVTs carrying the troops, in order to effect a heavy fire power against the beach defenses during that very tense and critical stage of an amphibious landing when all other firing, rocketing, and bombing has of necessity been lifted. That these craft paid their way in our revised concept of landing operations cannot be denied. The 75mm howitzer which poked its snub nose out of its 3-inch armored turret plus the murderous automatic fire of these craft literally filled a hitherto unfillable gap.

As if never forgetting its birthright, one of the most outstanding uses of the amphibian during battles was constant supplying of food, water, medical supplies, and clothing to the front-line troops and returning cargoes of wounded men to the prompt attention of the medical collecting points and field hospitals. Several LVTs were detailed to be rigged as emergency field operating rooms for cases of utmost urgency.—*U. S. Naval Institute Proceedings*. ★

The Story of the Machine Gun

STRANGELY enough, the American who invented the first practical machine gun, like the inventor of dynamite, hated war and hoped his invention would bring an end to all wars.

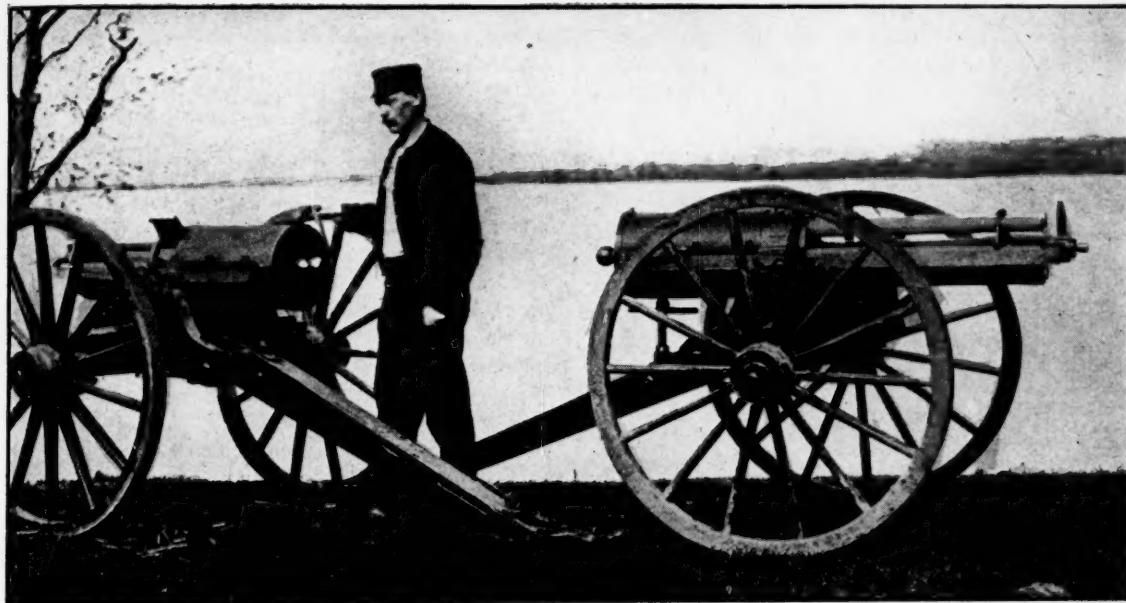
That man was Dr. Richard Jordan Gatling, born 18 Sept., 1818. Unfortunately, the doctor's dream, born of the horrors he witnessed on Civil War battlefields, was not to be realized. He envisioned a world held from war through terror of his death-dealing, rapid-fire gun. Instead, the machine gun became just another instrument for dealing out mass death. But, as with every development of war, a counter-measure was found—in this instance the tank, which broke the stalemate of trench warfare of 1916-18.

Gatling patented his invention in 1862 and offered it to the Federal government, but it was viewed with suspicion. Undiscouraged even by a fire which destroyed his experimental work, Gatling hired men to take the weapons out on Civil War battlefields and demonstrate their use to skeptical military men. In the closing years of the war,

General Butler used the gun against Confederate infantry in an engagement along the James River in Virginia. An improved model of Gatling's original design was adopted as the standard machine gun of the United States Army in the early 1870s.

While Gatling was working on his weapon, the mitrailleuse, another form of machine gun, was being developed in Brussels, Belgium. This clumsy weapon was used by the French in the Franco-Prussian War of 1870 with very poor results. The Prussians, who had only a few machine guns of their own, were greatly impressed by the possibilities of automatic weapons, but discarded the mitrailleuse for the Palmcrantz-Nordenfeld and several other models.

Chronologically, the Gardner, invented by an American, followed the Gatling gun. Gardner was years ahead of his time in the design of the tripod stand and the lightness of his weapon, which was widely copied by European arms manufacturers. The Lowell, a short-lived type, followed the Gardner. In 1885, Hiram Maxim displayed his machine



Dr. Richard Gatling hoped his rapid fire weapon would be the instrument to end war.

gun, which was followed by the Hotchkiss.

The Maxim introduced several revolutionary features to the automatic-weapon field. The action, for the first time, was complete automatic. The gunner merely pulled the trigger; the weapon fired, recoiled, ejected the spent round, reloaded—and repeated the performance as long as the ammunition was fed.

Another feature of the Maxim was the single barrel. A water jacket completely surrounded this one barrel and cooled it. Combined with these developments was a new type feed. All feeds previous to the Maxim had depended upon gravity, but this weapon took its shells from a canvas belt which ran through the action from a box. This combination of water cooling and belt feeding increased the sustained rate of fire. The Maxim was the forerunner of modern automatic weapons.

Closely following the Maxim, John M. Browning developed the Colt Browning automatic gun, which was adopted by both the Army and Navy and was used extensively during the Spanish-American War. The Browning was an air-cooled weapon. It used the gas of an exploding cartridge, which was diverted through a small port in the barrel, to drive a piston sliding in a cylinder attached below and parallel to the barrel. This, in turn, actuated the operating mechanism. This American weapon also was used by most of the European nations.

In 1906, the Schwarzlose machine gun, manufactured in Austria, was hailed as an innovation in automatic arms. It was modeled after the Maxim gun, but was greatly simplified.

The Lewis gun, invented by an American Army officer, was adopted by Great Britain as one of its standard machine guns in 1909. Improved models

are still in use today. One of the first light machine guns, the early Lewis weighed 25½ pounds and could be fired from the shoulder. A 49-round magazine fed the weapon, which had as one of its outstanding features a type of "forced draft" cooling of the barrel. The Vickers machine gun and the Bren gun are also used by the British Army.

Paralleling the Lewis gun was the Madsen, invented in Denmark, weighing only 15 pounds. This weapon was seriously considered for use by the American Army in the 1920s.

During the years preceding America's entry into the First World War, it became increasingly appar-

Editor's Note

Since the original appearance of this article in Popular Science Monthly, the editors of that publication have received a number of letters protesting certain facts. Excerpts from these letters read: "The Colt Browning machine gun employed a piston mounted at the end of a swinging operating arm or lever and not a piston sliding in a cylinder attached below and parallel to the barrel. . . . The Nambu is 6.5 mm in caliber and not 7.7 mm as stated. It is fed through a hopper on the left side into which six five-shot rifle clips are placed. . . ."

The DIGEST is reprinting this article as a brief and interesting history of the machine gun and does not intend to have it serve as a text for automatic weapons.

ent that the United States needed automatic weapons of its own design. The line of Browning automatics was the answer. The Browning automatic, or BAR, was similar to the Madsen but has proved superior. The second of this family was the Browning water-cooled machine gun, which was the standard heavy machine gun of this country in World War I, as it still is today.

The M1919A4 was the fourth of the series. A heavy barrel, surrounded by a ventilated jacket, dissipates heat fast enough to fire comparatively long bursts without burning out the riflings. However, it cannot fire for as long periods as can the water-cooled models.

The Browning .50-caliber machine gun completed the balanced automatic-weapons group. This long-range, heavy-hitting weapon helps to make America's warplanes among the most heavily armed in the world. Other models with longer barrels are mounted on trucks and half-tracks to battle enemy aircraft attempting to strafe motor columns and beachheads. Water-cooled models hurl luminous streams of tracers from anti-aircraft mounts on ships at dive-bombing pilots.

These are by no means all the automatic weap-

ons in America's bag of fighting weapons, but they are the basic types.

The Japanese have developed a complete line of automatic weapons. They are named after their inventor, Nambu—who, incidentally, picked up some of his ideas from foreign arms. Many of the weapons used by the Nips were captured at Singapore, Hongkong and Manila, and the weapons of almost every nation have been found on Pacific battlefields. For lightness and efficiency in jungle areas, the Japanese weapons are considered good, but in obtaining this lightness the Japs sacrificed hitting power. They began a late changeover in their weapons from the .256 caliber to .303, which is slightly larger than the American .30 caliber.

Development of the machine gun has faced certain limitations. These are primarily cooling and ammunition supply. The water-cooled barrel and the air-cooled barrel are at present the only answers to the problem of overheating.

The trend in automatic arms is toward lightness and mobility. The earlier weapons strongly resembled the cumbersome artillery of the time, while today's machine guns are streamlined and light enough for both jungle and mountain warfare.—*Popular Science Monthly*. ★

Radar Contact With the Moon

EARLY in January, Signal Corps scientists at the Evans Signal Laboratory succeeded in making radar contact with the moon. Radar pulses were projected from Belmar, N. J., to the moon, a distance of about 238,000 miles, and the returning echoes were unmistakably identified.

This was the first time that it was learned with certainty that radio waves sent out from the earth can penetrate the electrically charged ionosphere which encircles the earth, the celestial void, and whatever form of atmosphere that may surround the moon. It was the longest verified signal ever sent by man.

From the military point of view, these experiments have important potentialities, many of which remain to be explored. Of immediate significance is the knowledge that radio waves in the very-high-frequency band have range possibilities heretofore unrealized.

With a peak power of 50 kilowatts for a $\frac{1}{2}$ -second pulse, these waves traveled nearly 500,000 miles with sufficient power to give definite responses on the radar indicating

equipment. This would lead to the belief that greater power and more effective equipment will develop even longer ranges.

The demonstration that waves of the proper frequency and power can pass through the ionosphere opens up possibilities for the remote control of rockets, missiles, and even larger devices, not only through the stratosphere, but in all strata of the ionosphere, and beyond.

The knowledge gained from these experiments is expected to add to the science of meteorology as well as to radio propagation forecasting. New data will probably be developed relating to the effect on very high frequency radio waves of contact with the ionosphere at different angles.

The experiments are being continued with further modifications of the radar equipment for the purpose of possibly tracking the moon throughout its course with equipment employing even higher frequencies than those used in the initial tests.—*Army-Navy Journal*. ★

Our Fighting Plywood

by Robert Turner

PLYWOOD was the Cinderella of the war. Recognized by most of us as material for kitchen cabinets, chicken coops and furniture, its inherent properties and versatility won it countless vital war jobs on both the production and fighting fronts. Although such widespread use is new, industrially it is not a newcomer. The tombs of the pharaohs have yielded specimens of plywood furniture made 1,500 years before the birth of Christ.

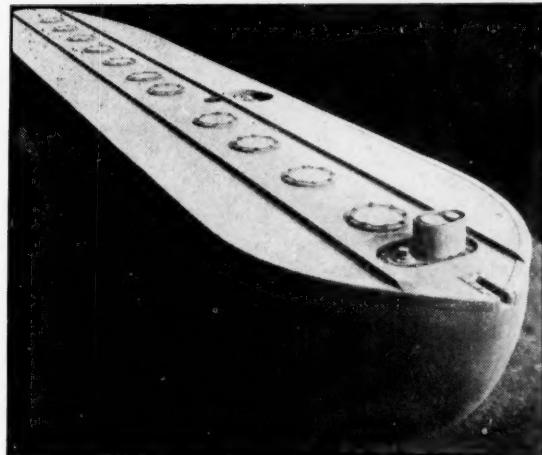
Today when the world is conservation conscious, plywood's full use of the wood content of a log is highly appreciated. The log that goes into ship decking may be taken as an example. In the old type of decking only about 15 to 20 per cent of the content of the log was actually converted into planks. Whereas, if that same log is converted into plywood more than 95 per cent is recovered. The same log will cover six times the area.

One of the most dramatic of the plywood striking weapons of the war was the engineer's storm boat used to throw a spearhead of assault troops across a river or a lake. Propelled by an outboard motor, it could carry a team of eight riflemen. Its defense was speed and evasive action. Up to 40 marines could be set ashore from another assault boat so light that it could land in three feet of water.

Streams were bridged with plywood treadways mounted on plywood half-boats. The troops that crossed this bridge may have worn a packboard of plywood to facilitate the carrying of awkward or irregularly shaped loads.

In the air, plywood has taken its place with other aircraft materials. Thousands of pilots were trained in plywood planes. The first plywood trainer adopted by the Navy was the N2T-1. It is estimated that planes of this type can be produced in about half the time required for a comparable metal plane and at a vast saving of materials. Another feature is that with plywood construction there are no welds or rivets to create airflow disturbances.

Plywood was used in various quantities in many types of aircraft, but none is more truly a forest product than the famed Mosquito, which structurally, with the exception of the ailerons is all wood. The Mosquito is assembled with both glue and screws and is fabricated entirely by hand. The fighter, bomber, and fighter-bomber are all one and the same ship, differently equipped. The design was so successful that the speed was actually 25 to 30 miles per hour in excess of estimates.



Plywood spare tank is dropped when empty.

The AAF's all-wood fighter was the Bell XP-77. It was the answer to whether a ship weighing less than 4,000 pounds could have a speed in excess of 400 miles per hour. No construction employed in the wood parts of this ship is beyond the scope of a shop equipped to make molded plywood structures with thermal-setting resin glues.

Also of plywood were the auxiliary fuel tanks which could be jettisoned to lighten ship and decrease wind resistance after the fuel loads had been expended. An egg-shaped model attached to the belly of a Corsair by bomb shackles could be dropped by the pilot just as a bomb is released. It required a minimum of materials and weighed less than a metal tank of the same capacity.

Gliders that could carry more than 30 men, or even trucks and artillery, were made with plywood wings. Cargo planes could land a sectional radio mast from 50 to 75 feet high made of tubular plywood which could be erected by a crew of three men in 30 minutes.

The most spectacular and widely known plywood weapon at sea was the PT boat which harassed the "Tokyo Express." As much as 3,000 square feet of plywood went into each of these craft. Eighty-foot panels were produced in a single piece for the hulls. Decking and gun turrets were also made of the same material.

Many patrol boats were built of plywood and plywood aircraft-rescue and crash boats which ranged in length from 29 to 60 feet followed the air operations. Racing at speed in excess of 50 miles per hour, they picked up ditched flyers and evacuated wounded from shore positions. Some of the larger craft were equipped to salvage the aircraft.

The ski troops that served in the mountains were equipped with plywood skis, and they had sled-toboggans of laminated plywood for the transportation of wounded and weapons.—*The Military Engineer*. ★

The Nuremberg Novelty

AS THE war criminal trials at Nuremberg progress, laymen may wonder what legal theory underlies the process, and why the court is trying the cases.

The Moscow declaration of 1943 stated that the criminals would be punished by a joint decision of the governments of the Allies. Some people read into this statement that the men would be summarily dealt with on capture without recourse to trial because they had already been deemed guilty by the various governments that had ordered their capture. Precedent for such a move could be found in the exile of Napoleon. He was made subject to "public vengeance" and sent to St. Helena without trial.

The novelty of the tribunal of the four great powers arises in the fact that the court is an instrument of policy rather than of justice as there is no doubt in anyone's mind that the court will find each defendant guilty of the crimes with which he is charged, for the men are self-convicted by their public bragging of the crimes before Germany was hopelessly beaten.

Respect for the tribunal as a court is not fortified by a look at the details of the indictments. The first count charges conspiracy. The second charges crimes against peace. The theory is that, regardless of the causes of World War II, to begin it was a violation of international agreements signed by the German government and that the responsibility for the breach of the treaties rests with the government heads. International law makes no provisions for the punishment of individuals. Only the Nuremberg charter and the indictments make such a provision. These were drawn up after the commission of the crimes. Hence the "law" under-

lying the "trials" is *ex post facto*. Our legal tradition frowns on such laws.

When the prosecution tries to prove the second count—the crime of making aggressive war—there will be a general of the Red Army sitting on the bench, a general of the same army that invaded Finland and the Baltic countries, and simultaneously with the Nazis, Poland. To try a man for aggression when an aggressor sits on the bench is indeed strange. Supreme Court Justice Jackson says that "there seems to be no way of doing anything about the crimes against peace and humanity except that the victors judge the vanquished." Does this mean that might makes right? This second count can have a destructive effect on international law.

The third count charges crimes against the laws of war. It is based on a theory that has been pretty well destroyed by the atomic bomb; that there are legal and proper ways of waging war as well as illegal and improper techniques. The atomic bomb lends force to the point of view that what is needed is not rules for clean wars but abolition of wars.

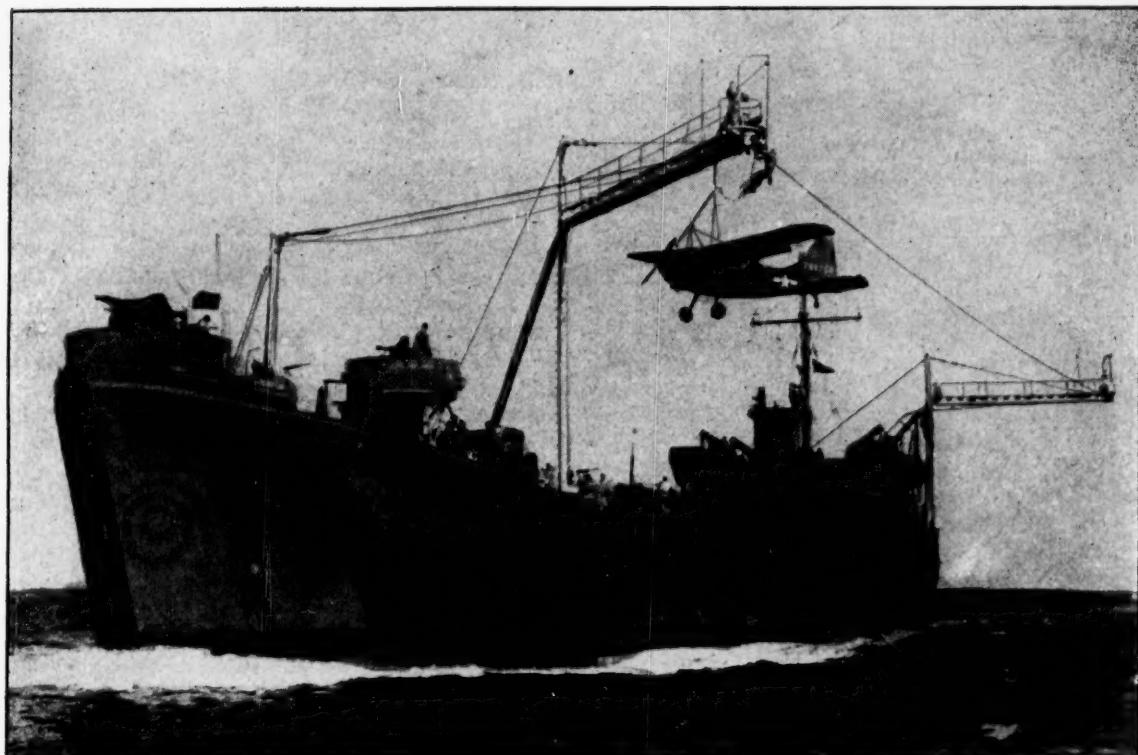
The fourth count charges crimes against humanity. In part, it refers to atrocities committed against minorities in Germany in 1933. The tribunal charter provides that such acts be considered criminal even if before the war, and even if not in violation of German law. The intent is that if one state treats its people in a fashion which another state considers criminal, it is violation of international law, and that the heads of the state should be held responsible. According to this theory, when the U. S. Army interned the Nisei on the West Coast the Jap government achieved the right to try Gen DeWitt and other officials in an Axis court. We would refuse to accept such a law on grounds that it is in violation of national sovereignty. This count is not based on any true legal concept respecting neither persons nor nations, neither victor nor vanquished.

However one looks at it, there is a wide gap between the theory of the Nuremberg indictment and the theory on which we conduct our affairs. Hence the trial can strengthen respect for the relation of victor to vanquished—i.e., for power—it cannot strengthen the relation called justice. It can only weaken that.

The Nuremberg trial will go to its conclusion. The spectator, who is aware that this is not an ordinary court of justice, but rather a political organ, will better understand the process as it unfolds.—*Fortune*.

El Toro School Moves

The special services school at MCAS El Toro, only Marine organization of its kind in the country, closed recently. Five classes of 250 west coast Marines went through it during its operations, students ranging from private to lieutenant colonel. Members of the faculty left to continue instruction at Quantico where special service lectures will be incorporated into basic officer candidate courses established for the United States Marine Corps.



Army L5 observation plane swings from the engaging cable of a Brodie rig on an LST.

Clothesline Air Strip

by **Ken Davis**

The phrase "pull a Brodie" has a new connotation. It now refers to the light plane pilot landing or taking off from a slender steel cable stretched 60 feet in the air.

Pilots are doing that now on land and even on ships at sea. Flying planes equipped with a special overhead hook, they snag a sling hung from the cable and are braked to a halt like a giant department store change basket. To take off, they merely have to change slings and reverse the procedure.

The Brodie system is named for Capt James H. Brodie of the AAF Transportation Corps, who dreamed up the idea during the days of the battle of the Atlantic. This is no circus stunt, for many operational flights have been made from these rigs. Many pilots, who have been "broken in" on this new technique, would rather land and take off from the cable than from the conventional air field.

Like a Paul Bunyan clothesline, the tight overhead cableway of the ground rig stretches between 65-foot tubular steel masts, two at each end of the wire. V-shaped bridle cables connect the masts and the main cable, thus leaving both ends open to approach.

The landing trolley, with a single light wheel,

is designed to give a pendulum effect upon acceleration, reducing inertia forces. To the landing trolley is shackled the landing sling—three loops of nylon rope affording a six foot target to incoming planes. Engagement of just one of the loops is sufficient for a successful landing. The arresting brake works on the principle of a giant fishing reel, brake force being applied gradually, reaching its maximum after the plane has travelled about 50 feet down the cableway.

To take off, the plane is put in the take off sling and hoisted to the cable. A travel release, consisting of a long hold-back line and a spring-loaded trip, prevents the plane from beginning its run until the engine is sufficiently "revved" up. A pull on a release lanyard then allows the plane to begin its take off run. An emergency release functions if the plane has not been released from the take off sling by the time it reaches the end of the cable.

Without wind, the average light plane can take off from the cable in 400 feet. With the wind, it can get off in 200 feet.

The great value of the system is that it is independent of the terrain. It can provide a landing "field" in jungles, marshes, mountains, or deserts.

Marines Not Too Enthusiastic

Marine Corps pilots are not enthusiastic about the present "Brodie Rig." Their impressions of its shortcomings were expressed by 1st Lt Harold C. Blair, now with the VMO squadron at Quantico, Va., who flew from both the land and the sea rigs during the Iwo Jima operation.

Combat-loaded, the Marine Corps' "flying jeep," or OY, weighs approximately 2,800 pounds—too heavy for good takeoffs and landings. Off Iwo, four planes were lost when they snagged the cable mounted on an LST and the landing hooks broke. In taking off from both the ground and sea rigs, the Marine planes need the full length of the cable to gain flying speed. This long run necessitates the use of the emergency release at the end of the cable which, on several occasions, dropped tackle on top of the plexiglass hood, cracking it beyond repair. This added to the difficulty of low speed, low altitude observation flights.

Lt Blair expressed belief that the system could be improved by adding at least 20 feet to the height of the supporting masts. As the plane loses flying speed under the tension of the arresting gear, the weight is rapidly transferred from the air to the cable, which sags dangerously low, leaving the plane a scant few feet from the sea or ground. If a hook should break at such low altitudes, it would be impossible for the pilot to regain sufficient speed to avert a crash.

The Marines also feel that a larger ship than the LST could be used to greater advantage with the seagoing rig to afford added height and stability. Making an accurate approach to the cable is greatly hampered by the motion of the ship in even a light swell.

Clothesline Air Strip (Cont'd)

It can be used in forward positions because of the ease with which it can be camouflaged, and even if the enemy were to spot it, it would prove to be a very elusive target.

Weighing less than 7,000 pounds, the rig is highly portable and can be moved, together with its crew by two 2½-ton trucks or one 5-ton truck, or it can be handled by transport aircraft. Little

more than twelve hours are required to have it set up and in operation. At sea, the 300 foot cable is supported by booms, kingposts and bracing struts, elevated and outboard parallel and on the port side of the ship.

The inventor believes that the rig could be engineered to take on much heavier planes and even envisions commercial airliners coming to roost on cables slung high above the streets of our major cities. *Flying Magazine.* ★

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Bringing in the Dope

by MSgt Jim Connell

THE business of gathering enemy intelligence has come a long way since the day when a commander could get all he needed through his field glasses. The field glasses remain, of course, and the tactical reconnaissance squadron and radar are simply extensions of the field of view. Apart from these mechanical extensions of the OP, the intelligence agencies available to the field commander now are about the same as those William the Conqueror used. Their increased effectiveness is almost entirely the result of systematic organization and exploitation of a few simple techniques. Trained interpreters made the extraction of information from PWs an almost painless process. German commanders were mortified by the superior knowledge of the German Army exhibited by our order-of-battle experts. Photo interpreters pinpointed every post in a fence and told you how high the fence was, if you wanted to know.

Singularly, the one source of precise and valuable information always available to the commander under any conditions of light, time, terrain, weather and enemy morale—the dismounted patrol—was the source that benefited least from the systematization that skyrocketed the value of his other agencies. It is extremely doubtful if any major improvements will be made until the individual infantryman is modified for jet propulsion. There is room for better planning and preparation for these patrols and an S-2 can reap bountiful rewards for setting up a better SOP to cover these things.

Obviously no system is foolproof and no situation is going to conform to the convenience of a staff officer. However, one regiment in Europe evolved a system that worked well for them. Their success was not due just to the skill of a few hardworked scouts. An important part of the division SOP was that every patrol include men who were new to the business, partly for the intrinsic value of the training and partly to provide every combat unit with a reserve of men skilled in patrol work.

The SOP also laid heavy emphasis on the necessity for proper preparation and briefing of patrols. Thorough preparation is the only way of assuring that the results a patrol gets are worth the effort and risk which its members accept, and it is the best possible insurance against patrol casualties. Also every step was taken to prevent impromptu and spur-of-the-moment patrolling.

Basing their estimates on their knowledge of the enemy situation and the additional information they wanted to get, the division and regimental "2" sections would determine what information their patrols had to bring back, where the patrols would have to get the information and how many patrols were necessary to adequately cover the field of operations.

Every patrol was planned at least 24 hours in advance. The patrol plan for the regiment was hectographed and distributed throughout the regiment and to adjacent and higher headquarters. Everyone knew what everyone else was doing and this eliminated a prime source of confusion. The division of G-2 kept a map indicating the projected routes, strength and missions of the patrols planned for the 24-hour period just ahead, with different colors for day and night patrols.

The men and officers selected for the patrols were brought back from their companies to battalion headquarters at least 12 hours before the patrol was to start. There they got hot food, a chance to wash and a dry place to sleep. The sleep and food paid off in increased morale and alertness.

Much effort went into the briefing. It was as thorough an account of enemy terrain and dispositions as the resources of the division could provide. Reports of patrols that had operated previously in the same area were emphasized. Higher headquarters provided maps with known installations overprinted in red. With this as a basis, along with information from prisoners, deserters and civilians, and information from air and ground reconnaissance, a defense overlay was made. Whenever the changes on the overlay became numerous or the nature of the change warranted it, copies of the overlay were attached to the G-2 periodic report.

Consequently, it became possible to send a patrol out with a knowledge of what had been happening in their zone of action for the past week and the nature of things they might run into on the way out and back.

In no case was a patrol given more than one extremely specific mission. If they were told to get a prisoner there was no mention made about observation or anything that might obscure or conflict with the primary aim. When a patrol returned close questioning was found to be remarkably productive, particularly in getting incidental information picked up while concentrating on the primary mission.

Finally patrol reports were consolidated and summarized at division, broken down into tubular form, accompanied by a sketch map indicating the patrol routes, and submitted to the CG. The form used was cross-referenced so that the report of a patrol could be checked against that of a previous patrol operating in the same area and against the consolidated report of all patrol action in the area. *Infantry Journal.* ★

Browning, Genius of Guns

by Dean Jennings

There are no streets nor towns named after him and no statues have been erected in his honor. The *Encyclopedia Britannica* gives him only twelve lines—small tribute to the man who indirectly saved more lives, protected more families, and yet, killed more men than any other individual since time began. His spirit rode with every pilot who attacked with machine guns and automatic cannon blazing and it walked with every soldier who carried a gun. He was the father of modern guns: John Moses Browning.

Do you like the feel of the .45 Colt Automatic? Browning perfected it in 1905. Have you ever fired a Stevens hammerless repeating shotgun or a Winchester lever action? They were all blueprinted in the mind of the same man. The .303s of the Spitfire and the .50s and the 37mm cannon in the nose of the P-38 were all planned in a workshop in Ogden, Utah, where the Mormon gunsmith had earlier developed the machine gun used by marines during the Boxer Rebellion.

He came naturally by his talent for firearms, his father having been a gunsmith who moved to Utah in 1851. When young Browning was 24, he patented his first rifle, a single-shot weapon with a lever that opened the breech and ejected the spent

cartridge in the same motion. The success of this gun was so great that he decided to open a shop for himself. So, in partnership with his brother and two half-brothers, the business was established and a stock of 600 guns was produced. Winchester bought the entire stock and the patent rights for \$3,000. The partnership thus started, proved so successful that it lasted until the death of the brothers.

In 1884, Browning created the lever-action repeating rifle. This model, called the '86, carried its cartridges in a tubular magazine under the barrel. Later, he used the same mechanism in a .22 caliber rifle and applied it to a repeating shotgun.

While engaged in target practice along a river bank, he noticed how the reeds by the water's edge were affected by the muzzle blast of each shot. His brother commented on the power contained in the expanding powder gases. He began his tests of the power in the gases by drilling a hole in a block of metal and firing test shots through the hole. Each shot caused the block to jump. Next he attached a small metal flap to the muzzle by means of a hinge. Again the results were as expected: the flap flew back with great force after each shot. His theory practically proved, he attached the flap



The Browning Machine Gun is a far cry from the Gatling Gun of 80 years ago.

to the repeating mechanism in the breech by metal rods. Thus he had the first automatic repeating rifle. The flaps and rods were cumbersome but he eliminated them by drilling a small hole in the barrel through which the gases could escape and act on a small piston set underneath and parallel to the bore.

He placed this new gun in his display window with a placard announcing that the weapon would fire 16 shots per second. No one believed the claim, but after testing, the Army adopted the gun and it went to war with Theodore Roosevelt in the Cuban campaign. Later, it was carried by marines into revolt in China. In the first World War, it was the standard machine gun for our forces.

Seeking new outlets for his inventions, Browning went to the Belgian armament manufacturers. It was there that he produced the first automatic pistol. A repeating pistol is now called an "automatic" no matter what concern has a trade-mark on it, but basically it is still a "Browning." He submitted his .45 caliber model to the government just before the war and it was adopted and put into production at Colt Patent Firearms.

Although John Browning died in 1926, the dynasty of fine arms continues unbroken with his son, Val, and other members of the family still working in the same shop in Ogden. *Coronet.* ★

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Officer Transfer Order

ANY officer who applies for transfer to the regular Navy or to regular Marine Corps and then decides he does not want to stay, may resign at the pleasure of the President of the United States. What is more, he may resign on 1 January 1947 and his resignation will automatically be accepted by the President, states ALNAV 283.

This unequivocal guarantee was authorized by the President and released by the Secretary of the Navy in order that there may be no question in the minds of reserve and temporary regular officers concerning their military careers.

In explanation of the statement, the ALNAV points out that the Navy realizes reserves and temporary regular officers have been asked to apply for permanent service even though the authorized size of the postwar Navy has not yet been decided by Congress and the President. Therefore, it is acknowledged that many reserve and temporary regular officers may hesitate to apply for fear the Navy's sincere purpose may be effected by later developments.

Because the Navy is not pressing officers to make a final choice immediately, reserve and temporary regular officers will be eligible for consideration in the regular Navy or Marine Corps, provided their applications are received within six months following the date of release from active duty or separation under honorable conditions.

Body Armor for Marines

PLASTIC body armor had been perfected for combat use by Navy and Marine Corps assault troops and flyers by the end of the war.

Laminated glass-cloth combat jackets, which had been given a preliminary test at Okinawa, were ready for the marines who were poised to storm the shores of Japan. Laminated nylon flak suits had been distributed to Navy and Marine Corps airmen to protect them against heavy anti-aircraft fire encountered over the Japanese home islands before the final surrender. Plastic body armor had its origin in the Naval Research Laboratory.

A magazine advertisement in December 1940, which showed Henry Ford hacking with an ax at a plastic automobile fender, helped initiate the Navy laboratory's plastic research program. It caught the eye of Rear Admiral Harold G. Bowen, then director of the laboratory, who had been following the progress in the development of plastics. He had Dr. G. R. Irwin, head of the laboratory's ballistics section, start research in his department.

The program was backed by the Bureau of Aeronautics with the view of obtaining a flak suit for Navy and Marine Corps aviators. The airmen had refused to wear the suit developed by the Army because it was too heavy and too hot.

A joint Army-Navy board was established to evaluate the use of plastic armor by both services. Army Ordnance maintained that manganese steel, which had proved itself in World War I, would continue to be a superior protection against fragments. The Army later used plastics in flak suits but reinforced the new armor with steel or aluminum plates.

Two officers of the Bureau of Medicine and Surgery staged a demonstration which popularized the new armor. One man wore a specially designed jacket into which plastic armor plates were inserted. The other officer fired a .45 caliber pistol but the bullet blunted itself on the jacket and fell harmlessly into the "victim's" hand.

Although the new Doron plastic armor is lighter, more pliable and more comfortable than steel, it has, at present, the disadvantage of being bulky. It was intended primarily for use in jackets for ground personnel and life jackets for ship's crews.

The nylon flak suits for airmen weigh slightly more than 18 pounds, as compared to the weight of the steel suits which range from 28 to 32 pounds. Flexible nylon armor cloth was used by the Navy for flyers and flak curtains buttoned inside planes. *Army and Navy Register.* ★

Corpsmen with the Marines

by Capt H. H. Haight (MC) USNR

FEW people out of the naval service realize that the Marine Corps has no medical department of its own and that all of the medical functions in the Corps are performed by the Navy. The doctors, dentists, chaplains, and hospital corpsmen who perform the feats of mercy which have been so widely heralded during the attack and occupation by the Marine Corps of Japanese-held islands and atolls are all Navy personnel.

So little attention has been paid to this fact that it came as rather a shock to new officers and men alike when they received orders assigning them to the Fleet Marine Force, Pacific. Most of them joined the Navy with a vision of neat, clean uniforms, shiny instruments, nurses in white uniforms, of sailing the Seven Seas aboard a battlewagon or aircraft carrier or of serving in naval hospitals with plenty of good chow, comfortable bunks, and plenty of liberty.

They found themselves, instead, attached to a workingman's outfit, their neat blues replaced by combat clothing, their shiny, black shoes replaced by field shoes and their comfortable battlewagon a vision for some time in the future. Instead of sailing the Seven Seas, they found themselves trudging wearily under full pack in the dust and sunshine or through the mud and downpour. Their training, instead of hospital ward duty ashore or afloat, became field sanitation, emergency first-aid treatment, splinting of fractures and dressing of wounds, transportation, personal hygiene and, above all, the means of self-protection and survival.

Nazis Harnessed Noise

According to German papers, the "hollow rod" and the "noise-making buoy" defeated one of the most dangerous weapons of the war, the British air-borne mine. These mines have two fuses; one is operated acoustically, the other magnetically. The noise of the ship's propeller makes the fuze active, while the hull of the vessel sets the magnetic device in motion. For this reason, German minesweepers were equipped with two new devices: the noise-making buoy, similar to the paravane, was fitted alongside the vessel in order to make a noise like that made by the propeller. Towed behind the minesweeper was a hollow cylinder containing a big magneto intended to blow up the mine at distances up to 300 feet.—The Aeroplane, Great Britain.

A hospital corpsman, after training and conditioning and assignment to a Marine Corps unit, took his ocean voyage as a passenger rather than a crew member and was subjected to the crowded conditions and stuffiness which are bound to prevail on all troop transports. On D-day he "hit the beach" with the assault forces or shortly thereafter, depending upon the unit to which he was attached. He was exposed to the same hazards of battle as the marines themselves.

Before the onset of the war, the hospital corpsmen held themselves somewhat aloof from the marines and the feeling was mutual. By regulation, the hospital corpsman was exempted from many of the menial duties which the marines fell heir to. Conversely the marines retained a mild feeling of dislike for the Navy men because they did not have to stand guard duty. It has been interesting to note as time has gone on and one after the other of the objectives were taken, as men were killed or wounded, as blood was shed and it has been found that the cry of "Corpsmen" has never gone unanswered, how this attitude has been altered.

Officer and men alike of the Marine Corps have a hearty respect and nothing but admiration for the hospital corpsman who has been always on the job to minister to these wounded when the going was tough. Feats of outstanding heroism and devotion to duty have been numberless and the attitude of rivalry and suspicion has disappeared entirely. It has been displaced by an attitude of comradeship and mutual respect.

The organization of the Medical Department in combat follows the plan of the Marine Corps organization almost exactly. The company-aid men are attached directly to the platoons and stay with them throughout any campaign, administering first aid to the wounded and injured in the front lines. They assist in the evacuation of these wounded to the battalion aid station where other hospital corpsmen and medical officers give additional aid, combat shock, administer blood plasma and prepare the patient for further evacuation to the rear. The next step is the medical company which backs up the regiment to which the wounded man is attached.

The medical company consists of five medical officers and 70 hospital corpsmen. This unit is equipped to do definitive surgery and is located far enough behind the front lines to be in a relatively protected position. Here the wounded man is held until further evacuation to ship, hospital ship, or by air to a fleet hospital is possible. All down the line of evacuation, the role of the hospital corpsman is paramount, skilled and life-saving.—*Hospital Corps Quarterly*. ★

Sub PhMs

In submarine service, the pharmacist mate may run into anything, and does

IN THE history of the submarine service, there has been little written about the submarine pharmacist's mate. Aboard a ship the size of a sub, the pharmacist's mate is on independent duty and his responsibilities are the same as those of a medical officer.

Pharmacist's mates now entering on the submarine service are required to attend school at the sub base at New London, Conn. This school is not just an independent duty school, but one that requires all applicants to be ready for independent duty in general service.

Before being entered in a class, the applicant must be passed by a psychiatrist for emotional stability (five per cent fail). In the class he must maintain high academic grades or he will be dropped and reassigned to general duty. The high standards are attested to by the 50 per cent rejection rate.

The school is of eight weeks duration and during that time the men must take courses in medical and diagnostic procedure, anatomy and physiology, pharmacy, chemistry, and laboratory procedure and a multitude of other courses of a more routine nature. He must also spend two weeks in the operating room and attending sick calls with a medical officer and take courses from the dental department in first aid and dental procedure.

In actual service, the pharmacist's mate may run into anything and everything. On one occasion, a submarine picked up the survivor of a battle with a Jap patrol vessel. The Jap had a two-inch gash in his throat just above the "Adam's apple." The pharmacist's mate treated the wounded enemy and when the sub came into port all that was necessary for the medical officer to do was to continue the dressings until the wound healed.

Another man ran into quite a bit of work on his first patrol. The sub was in a surface battle, exchanging fire with a Jap patrol ship when four of the sub's gun crew were hit by machine gun fire. One of the men hit had a compound fracture of the femur. The broken leg was too much for the equipment on hand in the sub's sick bay and so the machinist's mate made an Army-type half-ring splint from a drawing supplied by the pharmacist's mate. The splint was applied and when the leg was examined at a shore station the bones were in perfect alignment and the hospital had only to continue the traction. ★

Bad News for Mosquitos

The Navy's newest repellent proves its worth under jungle conditions, holds insects at bay over five hours.

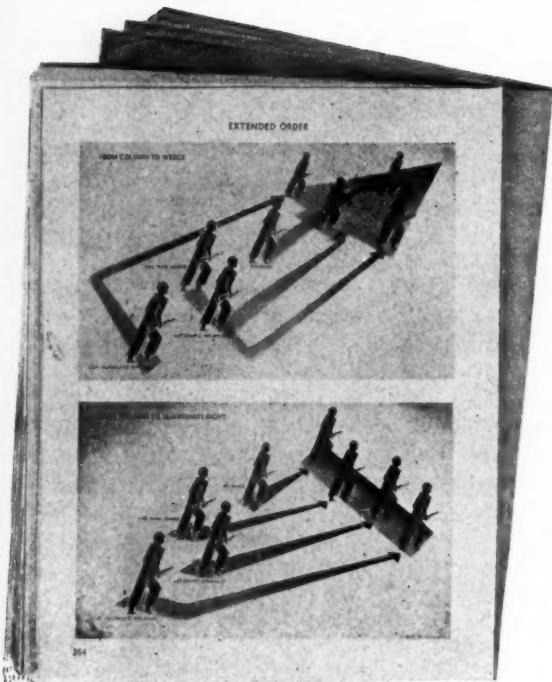
NMRI 407, the Navy's newest and most potent mosquito repellent, is being tried out under field conditions in Guatemala. In laboratory tests at the Naval Medical Research Institute, it held mosquitoes at bay for over five hours. The average time to the first bite was 322 minutes.

Associated with Lt Michael Pijon in the mosquito repellent studies at the Naval Medical Research Institute were Lt (j.g.) L. A. Jachowski, Jr., and PhM 3/c H. J. Gerjovich and M. L. Hopwood.

During the war dimethyl phthalate was the most commonly used insect repellent, but its repelling time was only 80 or 90 minutes. NMRI 201, announced by the Navy several months ago, had a repelling time of about five hours in the laboratory. When used by the several groups in the jungle, this time was about twice as long. Better ones have since been developed, among them 407 and 448.

THE repellents were developed in the course of more than two years of work during which many chemicals were screened and the most promising subjected to further study. After the naphthol derivatives were found to be apparently effective, a whole series of them was synthesized and subjected to various chemical manipulations until repellents that "are final and have solved the problem" were developed. These new repellents are odorless and colorless liquids. They are used like a lotion.

The Department of Agriculture, Pan American Union and Office of Inter-American affairs have cooperated and assisted in various phases of the work of the new repellents.—Science News-Letter. ★



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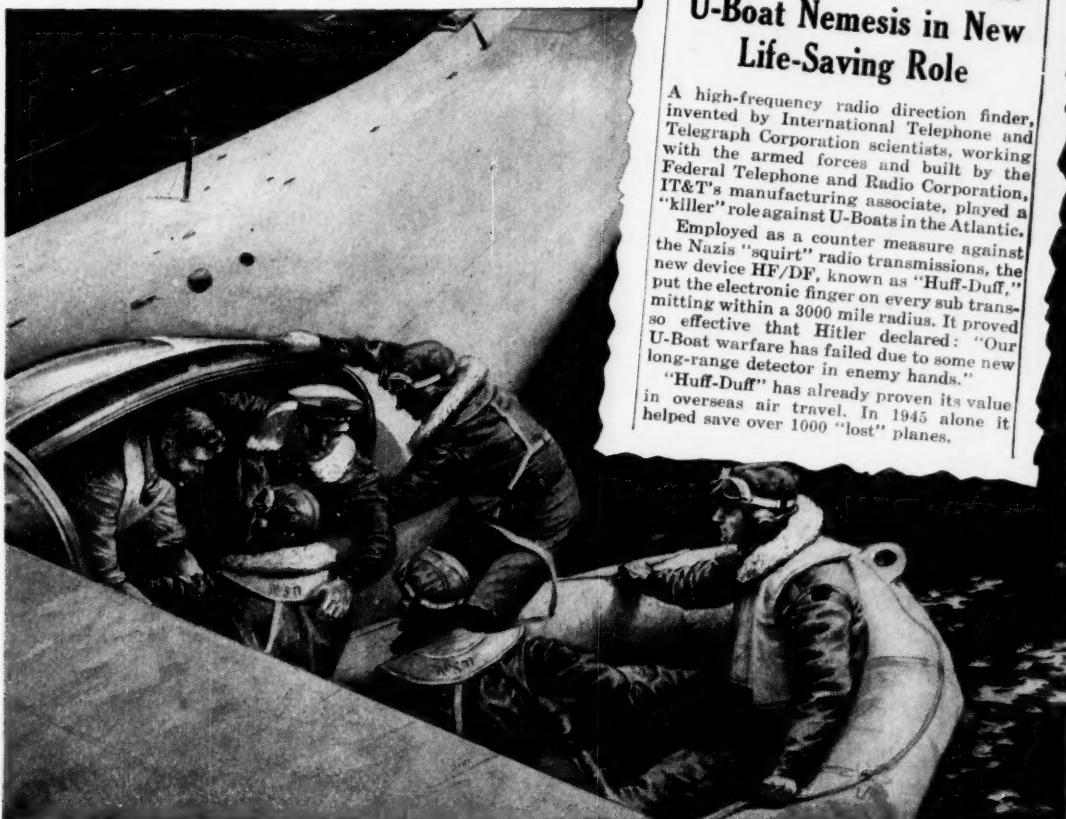
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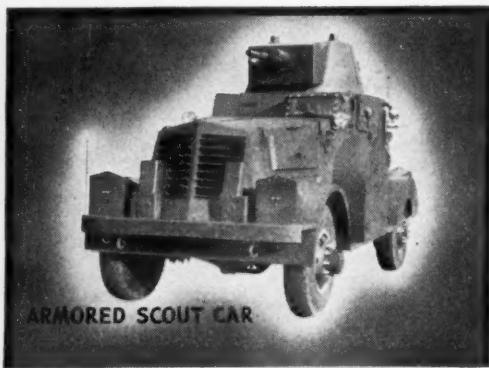
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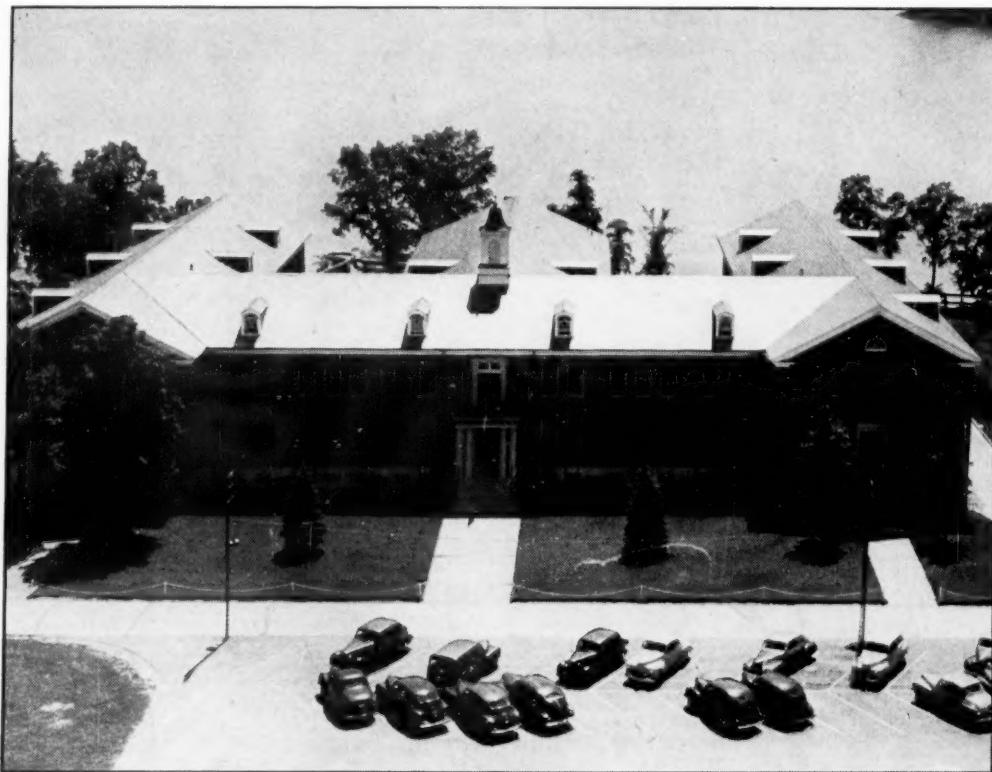
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The Gazette's New Home



Headquarters, Marine Corps Schools, Quantico, Va.

WITH this issue, the Marine Corps *Gazette*, official organ of the Marine Corps Association, settles down in its new postwar home, having recently become a part of the Marine Corps Schools with the Commandant of the Schools as its new editor-in-chief.

The transfer of the *Gazette* from its editorial offices in Washington, D. C., to Quantico, Va., was effected on 15 January, following the Commandant of the Marine Corps' approval of a recommendation submitted by the *Gazette's* former editor-in-chief, Colonel John Potts. The recommendation, which outlined some of the problems facing the magazine during the postwar period, emphasized the important part played by the Schools during the war and the future benefits to be derived from making the publication a part of the Schools.

The transfer will not effect any change in the *Gazette's* present editorial policy or format. The magazine will continue as the official organ of the Marine Corps Association,

which was formed in 1913 at Guantanamo Bay, Cuba, by a group of foresighted Marine officers for the purpose of gathering and disseminating military news and information of professional interest.

The formation of an Editorial Board composed of staff officers of subordinate schools to assist and advise the Commandant of the Schools in matters pertaining to editorial and financial aspects of the publication was announced in a recent Schools' order following the transfer.

During the war, the *Gazette* received high acclaim from outstanding writers and publishers for its complete and dramatic coverage of Marine activities in the Pacific theater. Many of its articles provoked outstanding comment and were often reprinted in commercial magazines for popular consumption. It is hoped that our many contributors will realize the important part they have played in achieving this mark of distinction.